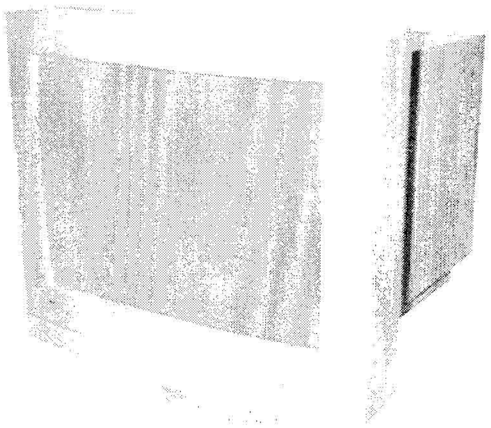
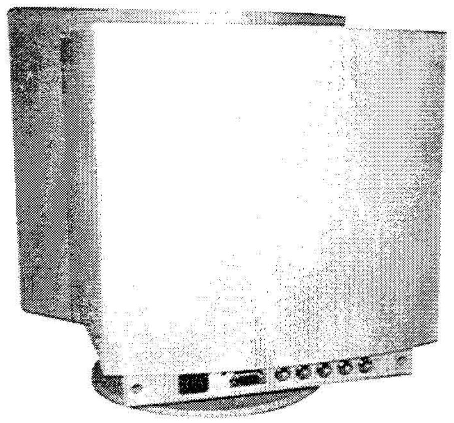
MODELS JC-2141UMA/B/B(EE)/R
JC-2142UMA

COLOR MONITOR MultiSync 6FG
SERVICE MANUAL

PART NO. 599910335

Better Service
Better Reputation
Better Profit





NEC Corporation
TOKYO, JAPAN

CONTENTS

Page No.

SPECIFICATIONS 1
SERIAL NUMBER INFORMATION 6
MONITOR ADJUSTMENT CONTROLS 7
DISASSEMBLY 10
PWB ASSY LOCATION DIAGRAM 13
DISASSEMBLY OF BOARDS 14
CONNECTOR, CONTROL AND TEST POINT LOCATION DIAGRAMS 23
ADJUSTMENT PROCEDURES 31
TROUBLE SHOOTING 56
CIRCUIT DESCRIPTION 88
PARTS DIFFERENCE LIST BETWEEN JC-2141UMA AND JC-2142UMA 133
REPLACEMENT PARTS LISTS 134
BLOCK DIAGRAMS 174
PRINTED WIRING BOARDS .... END
SCHEMATIC DIAGRAMS .... END

SPECIFICATIONS

Electrical Description

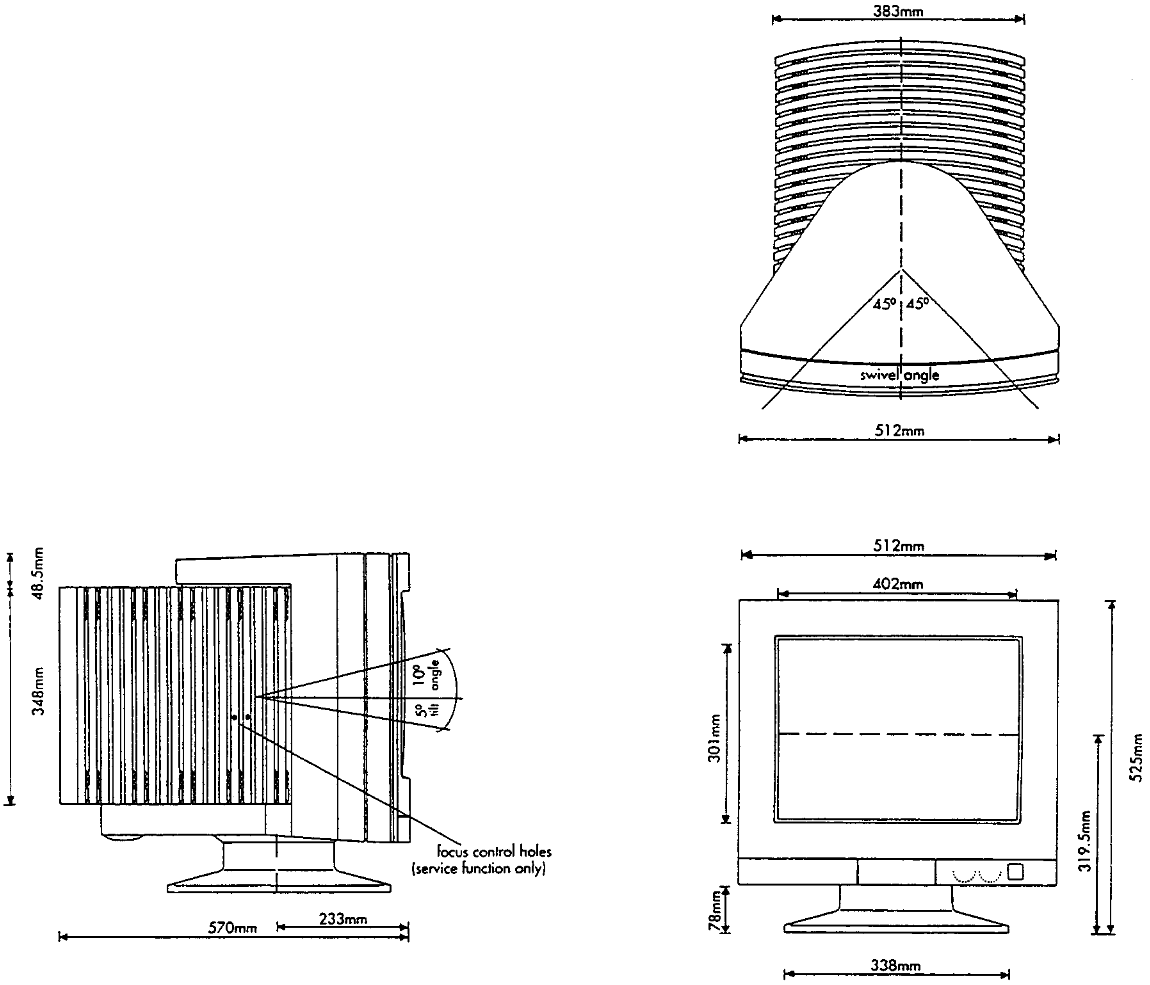
Picture Tube	21 inch, high contrast, flat square CRT, 1733 mm radius 90 degree deflection, 0.28 mm trio dot pitch Dot type black matrix Medium-short persistence phosphor, anti-static coating, invar shadow mask with litz wire yoke		
Input Signal	Video:	ANALOG 0.7 Vp-p 75/Ohms Positive	
	Sync:	Separate Sync TTL Level	
		Horizontal sync	Positive/Negative
		Vertical sync	Positive/Negative
		Composite sync TTL Level	Positive/Negative
		Sync on Green video (positive) 0.7 Vp-p and sync (negative) 0.3 Vp-p	
Display Colors	Analog Input:	Unlimited colors (depends on the video card used)	
Synchronization Range	Horizontal:	27 kHz to 79 kHz (Automatically)	
	Vertical:	55 Hz to 90 Hz (Automatically)	
Maximum Resolution	Horizontal:	1280 dots	
	Vertical:	1024 lines (non-interlaced)	
Maximum Video Bandwidth	Monitor: 135 MHz MultiCable: 75 MHz		
Active Display Area (Factory Setting)	Horizontal:	370 mm/14.6 inches	
	Vertical:	278 mm/10.9 inches (Dependent upon signal timing used, and does not include border area)	
Active Display Area (Full Scan)	Horizontal:	402 mm/15.8 inches	
	Vertical:	301 mm/11.9 inches (Dependent upon signal timing used, and does not include border area)	
Power Supply/Current Rating	AC 120 V, 60 Hz/2.9A	(JC-2141UMA/JC-2142UMA)	
	AC 220–240 V, 50/60 Hz/1.8 A	(JC-2141UMB/B(EE)/R)	
Power Rating	170 W (JC-2141UMA/JC-2142UMA) 170 W (JC-2141UMB/B(EE)/R)		
Environmental Considerations	Operating	Temperature 0°C to +35°C Humidity 30% to 80% 0-10,000 feet	
	Storage	Temperature −20°C to +60°C Humidity 10% to 90% 0-45,000 feet	

NOTE: The above specifications are subject to change without notice for further improvement.

Mechanical Description

1. Cabinet	Molded plastic cabinet with detachable tilt/swivel base.
2. Dimensions	512 (W) X 525 (H) X 570 (D) mm 20.2 (W) X 20.7 (H) X 22.4 (D) inches

Dimensions and tilt/swivel angle

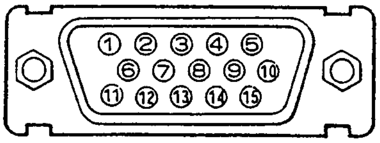

383mm
45°
45°
swivel angle
512mm
48.5mm
348mm
10° angle
5° tilt
focus control holes
(service function only)
570mm
233mm
512mm
402mm
301mm
78mm
338mm
319.5mm
525mm

3. Weight	35.8 kg/78.8 Lbs (Net) 44.3 kg/97.5 Lbs (Gross)

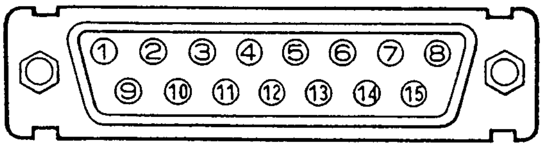
Pin Assignment Table

D-SUB INPUT

15 pin mini D-Sub
(IBM Computers)

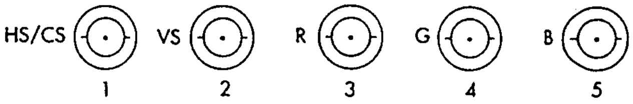


15 pin D-Sub
(MACII or LC Computers)



For the Monitor

MultiCable Signal	15-pin mini D-SUB	15-pin D-SUB
Red	1	2
Green	2	5
Blue	3	9
Hor Sync/Comp Sync	13	3
Ver Sync	14	12
Ground	4, 6, 7, 8, 10, 11	1, 4, 6, 11, 13, 14
No connection	5, 9, 15	8, 10, 15
Reserved	12	7



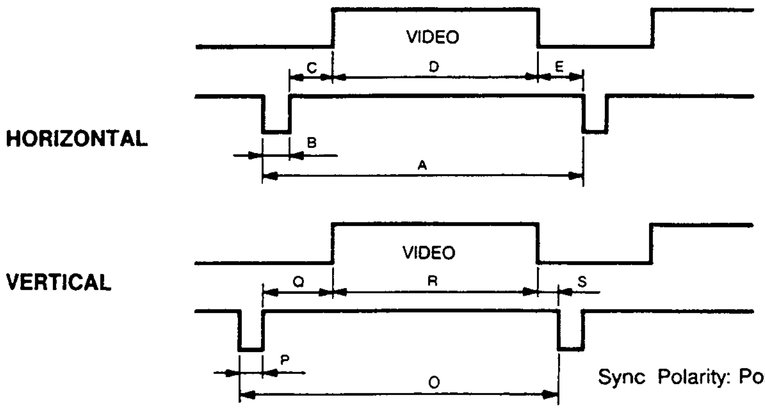
BNC Number	Separate Sync	Composite Sync	Sync on Green
1	Horizontal	Comp Sync	No connection
2	Vertical	No connection	No connection
3	Red	Red	Red
4	Green	Green	Green with Sync
5	Blue	Blue	Blue

For the Graphics Board

IBM VGA 15-pin mini D-Sub female	IBM 8514/A 15-pin mini D-Sub female	IBM XGA 15-pin mini D-Sub female	Apple Mac II or LC 15-pin D-Sub female
1 Red Video	1 Red Video	1 Red Video	1 Red Ground
2 Green Video	2 Green Video	2 Green Video	2 Red Video
3 Blue Video	3 Blue Video	3 Blue Video	3 Composite Sync
4 Reserved	4 Display ID 2	4 Display ID 2	4 Sense 0
5 Self Test	5 Self Test	5 Self Test	5 Green Video
6 Red Ground	6 Red Ground	6 Red Ground	6 Green Ground
7 Green Ground	7 Green Ground	7 Green Ground	7 Sense 1
8 Blue Ground	8 Blue Ground	8 Blue Ground	8 Reserved (+12 Volts)
9 Key (no pin)	9 Key (no pin)	9 +12 Volts Fused	9 Blue Video
10 Digital Ground	10 Digital Ground	10 Digital Ground	10 Sense 2
11 Display ID 0	11 Display ID 0	11 Display ID 0	11 Ground
12 Display ID 1	12 Display ID 1	12 Display ID 1	12 Vertical Sync
13 Horizontal Sync	13 Horizontal Sync	13 Horizontal Sync	13 Blue Ground
14 Vertical Sync	14 Vertical Sync	14 Vertical Sync	14 Ground
15 Reserved	15 Reserved	15 Display ID 3	15 Horizontal Sync

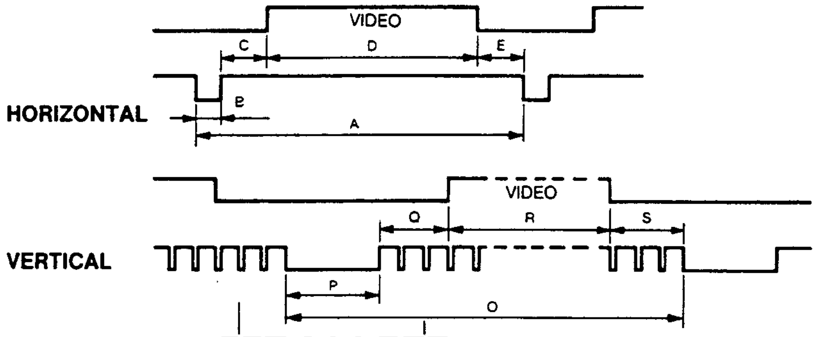
Signal Timing

SEPARATE SYNC


VIDEO
C
D
E
HORIZONTAL
B
A
VIDEO
VERTICAL
Q
R
S
P
O

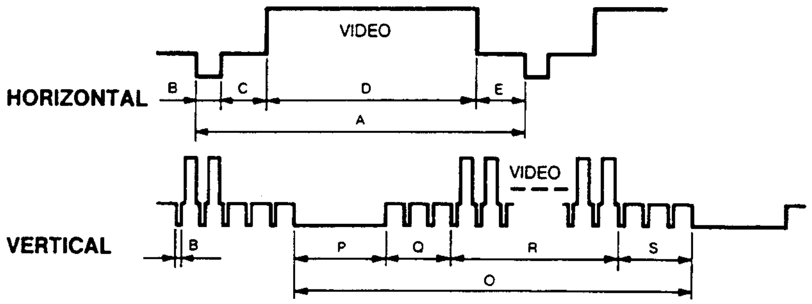
Sync Polarity: Positive/Negative

COMPOSITE SYNC


VIDEO
C
D
E
HORIZONTAL
B
A
VIDEO
Q
R
S
VERTICAL
P
O

Sync Polarity: Positive/Negative

COMPOSITE SYNC & VIDEO (SYNC ON GREEN)


VIDEO
HORIZONTAL
B
C
D
E
A
VIDEO
VERTICAL
B
P
Q
R
S
O

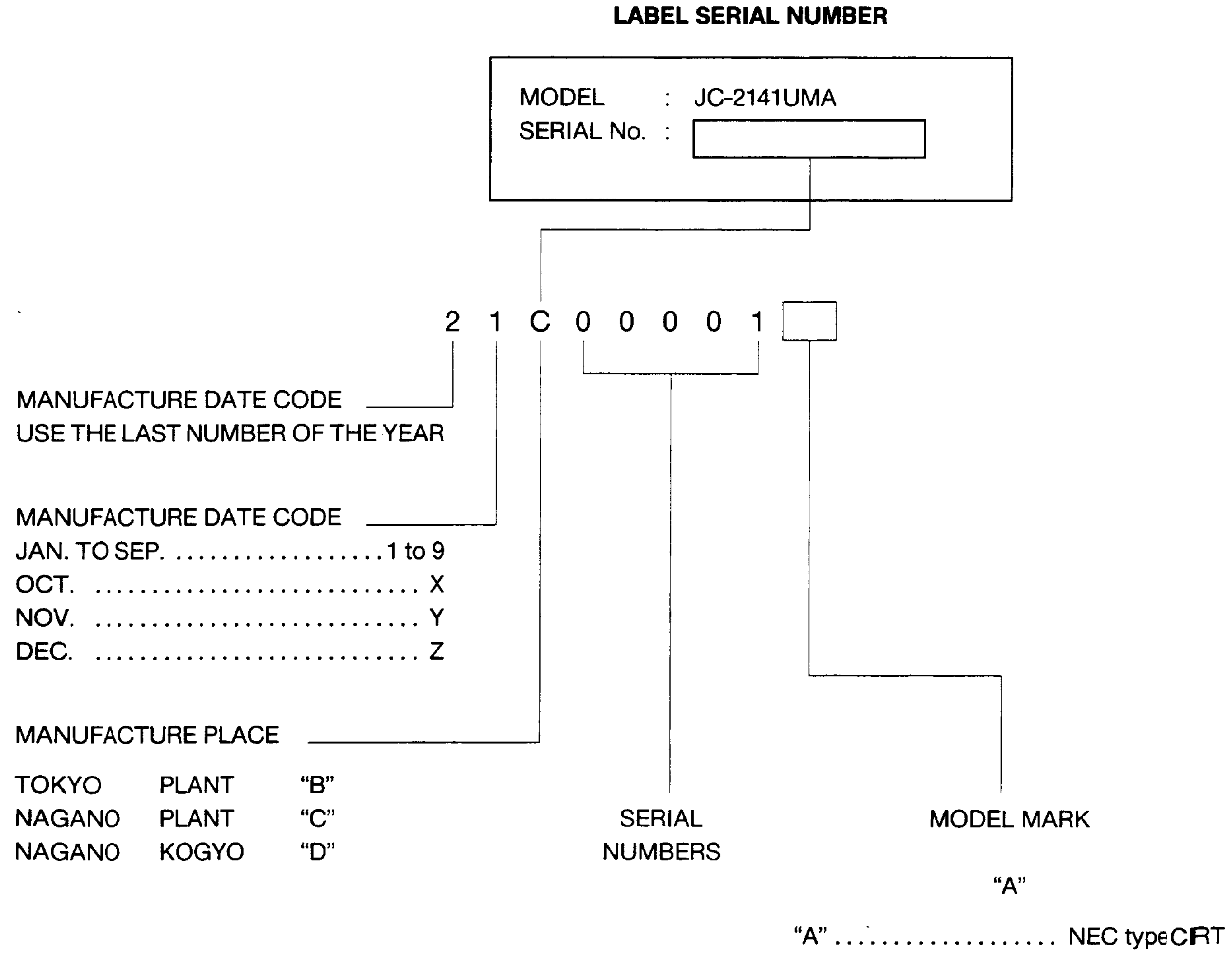
Sync Polarity: Negative

Preset Timing Chart

	VGA and MCGA Compatible			MACII or LC Compatible	VESA 640×480 at 72Hz	VESA 800×600 at 56Hz	VESA 800×600 at 60Hz	VESA 800×600 at 72Hz	8514/A & XGA Interfaced Compatible	VESA 1024×768 at 60Hz	VESA 1024×768 at 70Hz	1280×1024 at 60Hz	1280×1024 at 70Hz	1280×1024 at 74Hz
Resolution	640×350	720×400	640×480	640×480	640×480	800×600	800×600	800×600	1024×768	1024×768	1024×768	1280×1024	1280×1024	1280×1024
Horizontal Frequency	31.469kHz	31.469kHz	31.469kHz	35.000kHz	37.860kHz	35.156kHz	37.879kHz	48.077kHz	35.587kHz	48.363kHz	56.476kHz	64.310kHz	74.882kHz	78.855kHz
(A) Horizontal Period	31.778μS	31.778μS	31.778μS	28.570μS	26.413μS	28.444μS	26.400μS	20.800μS	28.100μS	20.677μS	17.707μS	15.550μS	13.345μS	12.681μS
(B) Horizontal Pulse Width	3.813μS	3.813μS	3.813μS	2.120μS	1.270μS	2.000μS	3.200μS	2.400μS	3.910μS	2.092μS	1.813μS	0.970μS	1.260μS	1.067μS
(C) Horizontal Back Porch	1.589μS	1.589μS	1.589μS	3.170μS	4.603μS	3.556μS	2.200μS	1.280μS	1.247μS	2.462μS	1.920μS	2.240μS	1.764μS	1.869μS
(D) Horizontal Active Area	26.058μS	26.058μS	26.058μS	22.810μS	20.317μS	22.222μS	20.000μS	16.000μS	22.760μS	15.754μS	13.653μS	11.960μS	10.079μS	9.481μS
(E) Horizontal Front Porch	0.318μS	0.318μS	0.318μS	0.180μS	0.762μS	0.667μS	1.000μS	1.120μS	0.178μS	0.369μS	0.320μS	0.370μS	0.252μS	0.237μS
Vertical Frequency	70.080Hz	70.080Hz	59.940Hz	66.667Hz	72.809Hz	56.250Hz	60.317Hz	72.010Hz	86.960Hz	60.000Hz	70.069Hz	60.000Hz	69.888Hz	74.117Hz
(O) Vertical Period	14.268mS	14.268mS	16.683mS	15.000mS	13.735mS	17.778mS	16.579mS	13.887mS	11.499mS	16.667mS	14.272mS	16.561mS	14.310mS	13.492mS
(P) Vertical Pulse Width	0.064mS	0.064mS	0.064mS	0.090mS	0.079mS	0.057mS	0.106mS	0.124mS	0.112mS	0.124mS	0.106mS	0.047mS	0.053mS	0.038mS
(Q) Vertical Back Porch	1.716mS	0.890mS	0.793mS	1.110mS	0.740mS	0.626mS	0.607mS	0.479mS	0.563mS	0.600mS	0.513mS	0.498mS	0.561mS	0.496mS
(R) Vertical Active Area	11.504mS	13.156mS	15.762mS	13.710mS	12.678mS	17.067mS	15.840mS	12.479mS	10.824mS	15.880mS	13.599mS	15.923mS	13.670mS	12.985mS
(S) Vertical Front Porch	0.985mS	0.159mS	0.064mS	0.090mS	0.238mS	0.028mS	0.026mS	0.772mS	0.000mS	0.062mS	0.053mS	0.093mS	0.027mS	0.000mS

SERIAL NUMBER INFORMATION

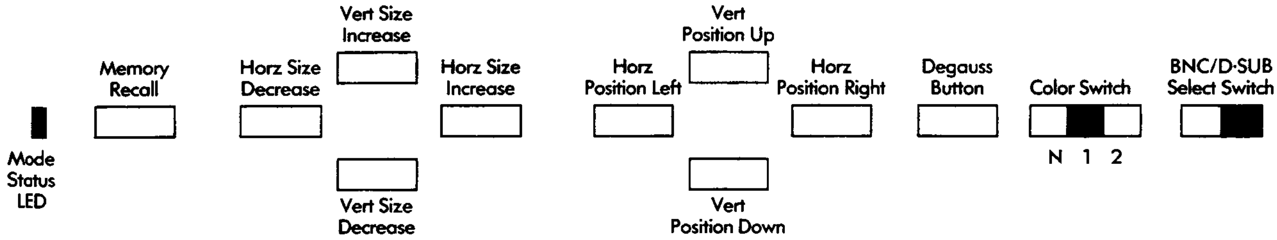
Refer to the serial number information shown below.


LABEL SERIAL NUMBER
MODEL : JC-2141UMA
SERIAL No. :
2 1 C 0 0 0 0 1
MANUFACTURE DATE CODE
USE THE LAST NUMBER OF THE YEAR
MANUFACTURE DATE CODE
JAN. TO SEP. .... 1 to 9
OCT. X
NOV. .... Y
DEC. .... Z
MANUFACTURE PLACE
TOKYO PLANT "B"
NAGANO PLANT "C"
NAGANO KOGYO "D"
SERIAL NUMBERS
MODEL MARK
"A"
"A" .... NEC type CRT

NOTE: MODEL JC-2141UMB, JC-2141UMB(EE), JC-2141UMR and JC-2142UMA comply with the above.

Monitor Adjustment Controls

Screen Mode Controls


Mode Status LED
Memory Recall
Horz Size Decrease
Vert Size Increase
Vert Size Decrease
Horz Size Increase
Horz Position Left
Vert Position Up
Vert Position Down
Horz Position Right
Degauss Button
Color Switch
N 1 2
BNC/D-SUB Select Switch

Controls

The Mode Status LED

Indicates the current level of the Advanced Digital Controls.
When the **LED** is off, the monitor is in the Screen Mode allowing adjustment of the screen image size and position controls.
The monitor is automatically in the Screen Mode whenever the monitor is turned on.

When the **Mode Status LED** is on, the monitor is in the Screen Mode allowing access to the AccuColor Controls and Side Pin-Cushion Controls.

When the **LED** is blinking, the monitor is in the Screen Mode, which allows NEC Service access to the Service Functions. This mode is for use by qualified service personnel only. If the **LED** is blinking, change the controls back to Screen Mode by pressing the **Vertical Position Up** while holding down the **Degauss Button**.

Mode	Mode Status LED	Controls	Command
Screen	OFF	Size & Position	Default mode or hold down Degauss & press Vertical-Position Up
AccuColor	ON	AccuColor & Side Pin-Cushion	Hold down Degauss & press Horizontal-Position Right
Service	Blinking	Service Function	For service use only

Advanced Digital Controls

The Memory Recall Button

Press to recall the factory pre-set data settings.

In Screen Mode:	reset size, position and side pin-cushion to factory settings.
In AccuColor Mode:	reset color to factory setting.

Horizontal-Size Decrease

Use to narrow the image's horizontal width.

Vertical-Size Increase

Use to increase the image's vertical size.

Vertical-Size Decrease

Use to decrease the image's vertical size.

Horizontal-Size Decrease

Use the widen the image's horizontal size.

Horizontal-Position Left

Move the image horizontally to the left.

Vertical-Position Up

Move the image up vertically. While holding down the **Degauss Button**, press this button to set the digital controls to Screen Mode, size and position controls.

Vertical-Position Down

Move the image down vertically.

Horizontal-Position Right

Move the image horizontally to the right. While holding down the **Degauss Button**, press this button to set the digital controls to AccuColor Mode.

Degauss Button

Use to eliminate the build-up of stray magnetic fields which alter the correct scan of the electron beams and alter the purity of the screen colors, focus, and convergence. When pressed, your screen image will jump and waiver a bit as the screen is demagnetized. Also used to move between modes.

CAUTION: Allow a minimum of 20 minutes to elapse between uses of the **Degauss Button**, when not switching from mode to mode. **Do not hold the button down continuously to avoid damage to the monitor.**

Color Setting Switch

Select the preferred color setting, either the normal factory setting, Programmable Color Setting 1 or 2.

Position N = Normal factory pre-set. The color set at the factory.
Position 1 = Programmable Color Setting 1
Position 2 = Programmable Color Setting 2 } These two settings can be adjusted to your preference.

(Refer to the Color Section for more information).

BNC/D-SUB Select Switch

Select the input video connector to be used.
Right position: D-SUB or mini D-SUB
Left position: BNCs

Contrast Control

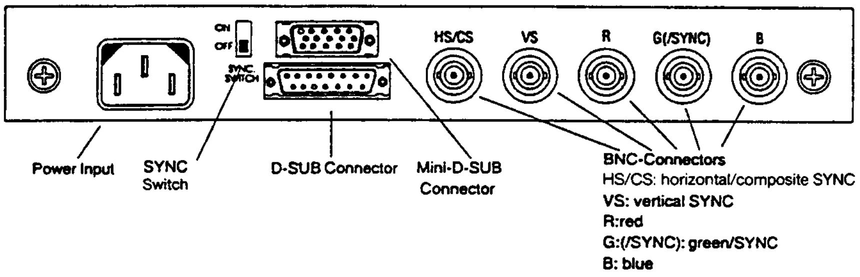
Adjust the image brightness in relation to the background.

Brightness Control

Adjust the overall image and screen brightness.

Power Switch

Turn the monitor power on or off. When the power is on, the LED Power Indicator Light above the power switch is on.


ON
OFF
SYNC SWITCH
HS/CS
VS
R
G(/SYNC)
B
Power Input
SYNC Switch
D-SUB Connector
Mini-D-SUB Connector
BNC-Connectors
HS/CS: horizontal/composite SYNC
VS: vertical SYNC
R:red
G:(/SYNC): green/SYNC
B: blue

SYNC Switch

ON Position:

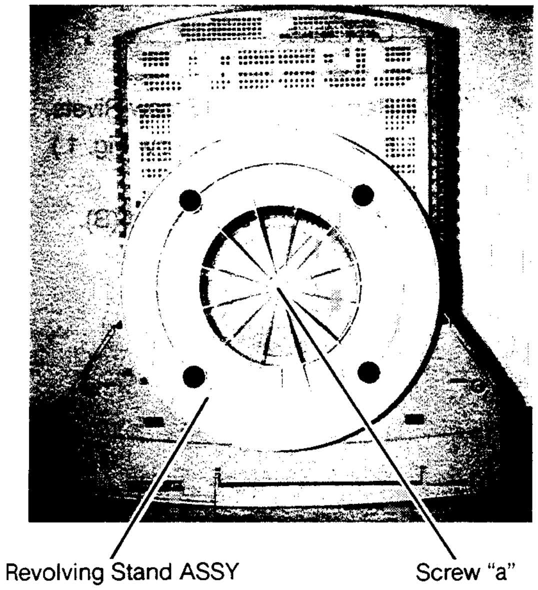
For use with video cards or computers with separate sync (VGA, 8514/A, XGA, for example) and equipped with a 15-pin mini D-SUB connector for the monitor input or composite sync with no sync on green signal.

OFF Position:

For use with Macintosh or compatible computers (not the Macintosh LD) with sync on green signals.

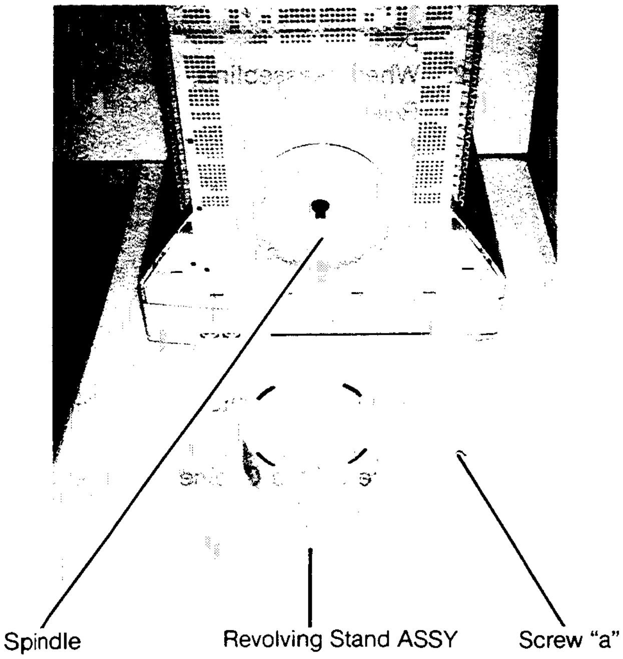
DISASSEMBLY

Tilt/Swivel ASSY


Revolving Stand ASSY
Screw "a"

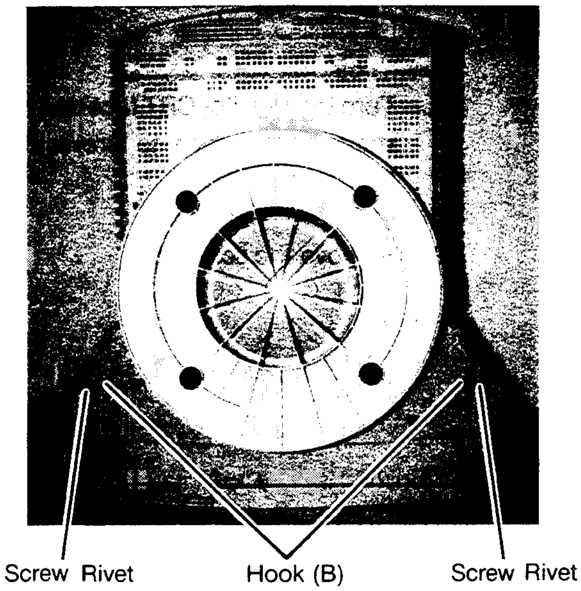
1. Turn the monitor CRT face down on a clean static free surface to prevent scratching CRT face.

2. Remove the screw "a".


Spindle
Revolving Stand ASSY
Screw "a"

3. Remove the Revolving Stand ASSY from the monitor.

Cabinet Back ASSY and Shielding Plate


Screw Rivet
Hook (B)
Screw Rivet

1. Turn the monitor CRT face down on a clean static free surface to prevent scratching CRT face.

2. Remove the two Screw Rivets.
   (For details, see below Fig. 1.)

3. Unhook the two Hooks (B).

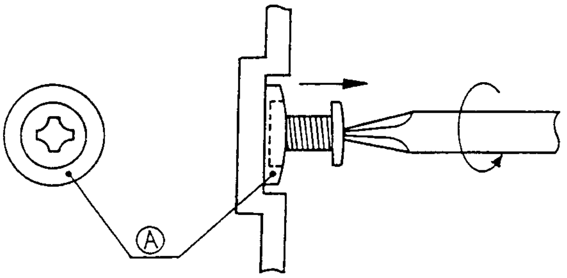
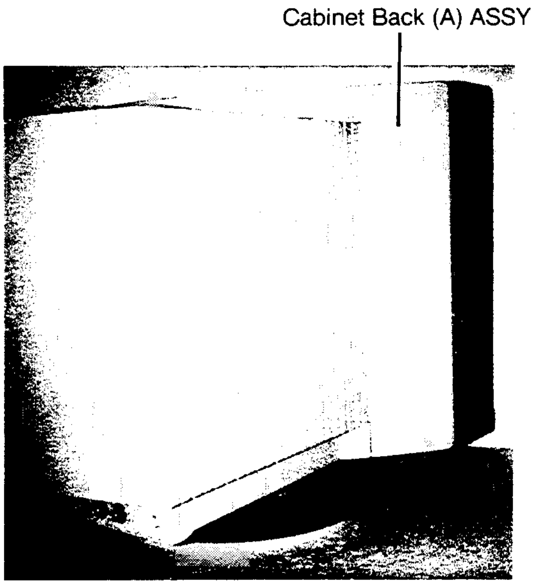


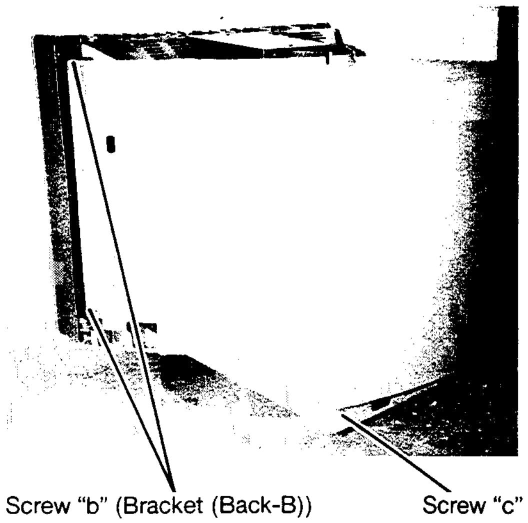
Fig. 1 Screw Rivet Removing Method

NOTE:
1. After Removing the Screw, take off the Ⓐ part.
2. When reassebling, use the new Screw Rivets.


Cabinet Back (A) ASSY

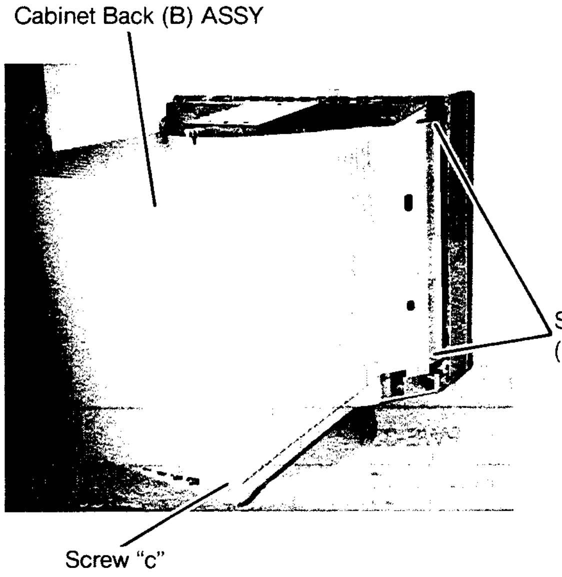
4. Return the monitor as normal.

5. Take off the Cabinet Back(A) ASSY from the monitor.


Screw "b" (Bracket (Back-B))
Screw "c"

7. Remove the two screws "b".

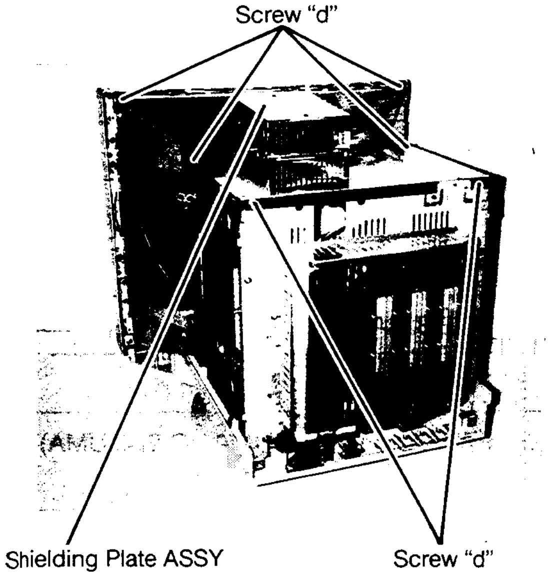
8. Remove the screw "c".


Cabinet Back (B) ASSY
Screw "b
(Bracket (Back-B))
Screw "c"

9. Remove the two screws "b".

10. Remove the screw "c".

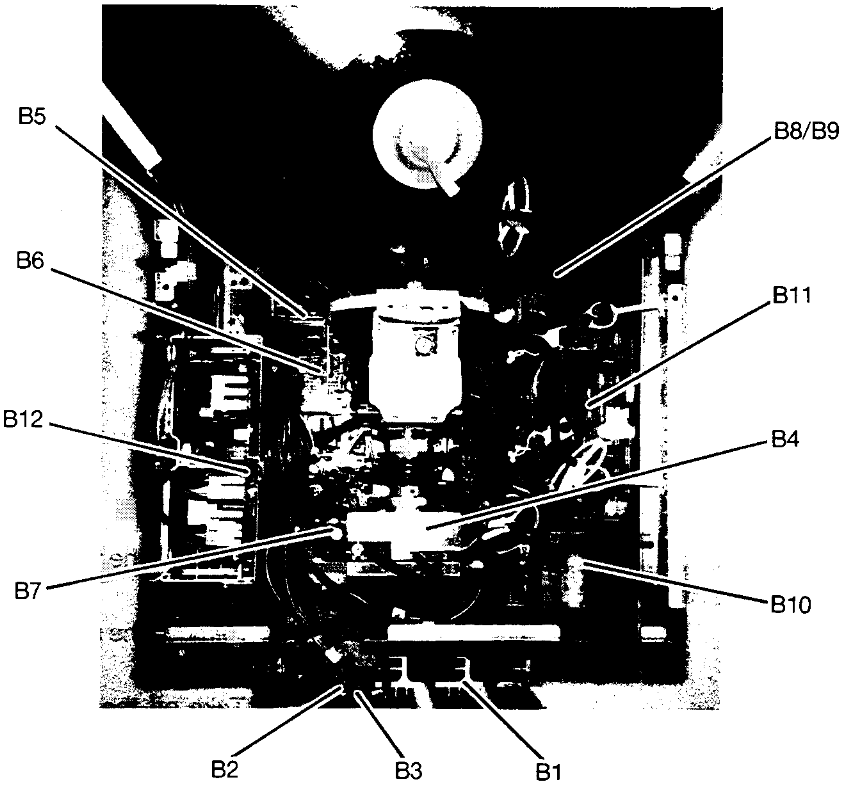
11. Take off the Cabinet Back(B) ASSY from the monitor.


Screw "d"
Shielding Plate ASSY
Screw "d"

12. Remove the six screws "d".

13. Take off the Shielding Plate ASSY.

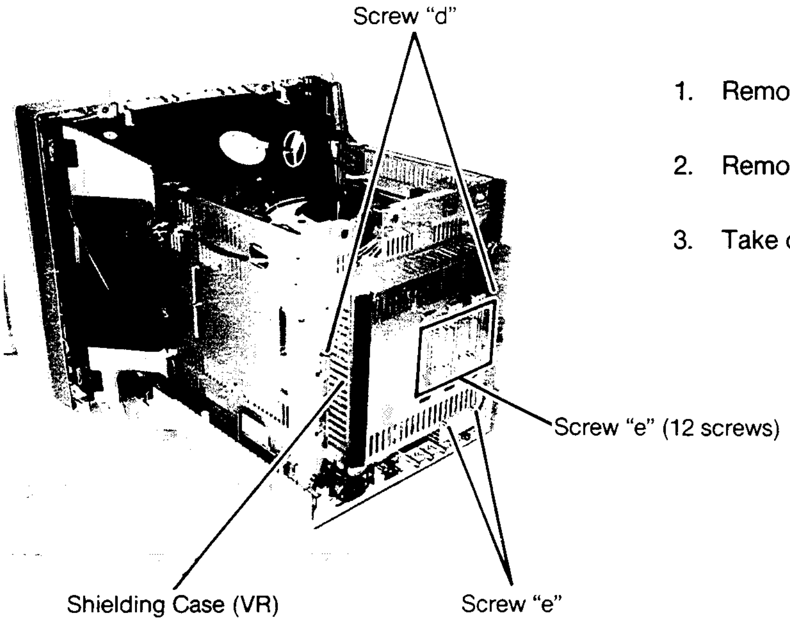
PWB ASSY LOCATION DIAGRAM



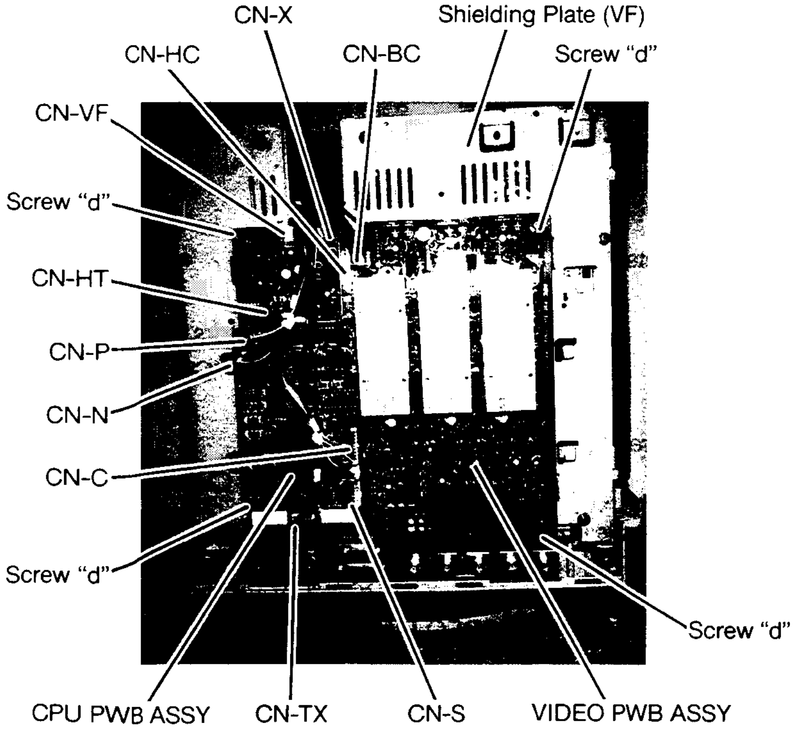
B1	VIDEO PWB ASSY	PWE-331
B2	CPU PWB ASSY	PWE-330
B3	CN PWB ASSY	PWE-328E
B4	CRT PWB ASSY	PWE-328B
B5	DEF PWB ASSY	PWE-329
B6	SDP PWB ASSY	PWE-339A
B7	CHP PWB ASSY	PWE-339B
B8	CONTROL PWB ASSY	PWE-328C
B9	VR PWB ASSY	PWE-328D
B10	FOCUS PWB ASSY	PWE-328A
B11	TR PWB ASSY	PWE-332
B12	SW REG PWB ASSY	PWE-341 (JC-2141UMA/JC-2142UMA) PWE-319 (JC-2141UMB/B(EE)/R)

DISASSEMBLY OF BOARDS

VIDEO PWB ASSY (CPU PWB ASSY)

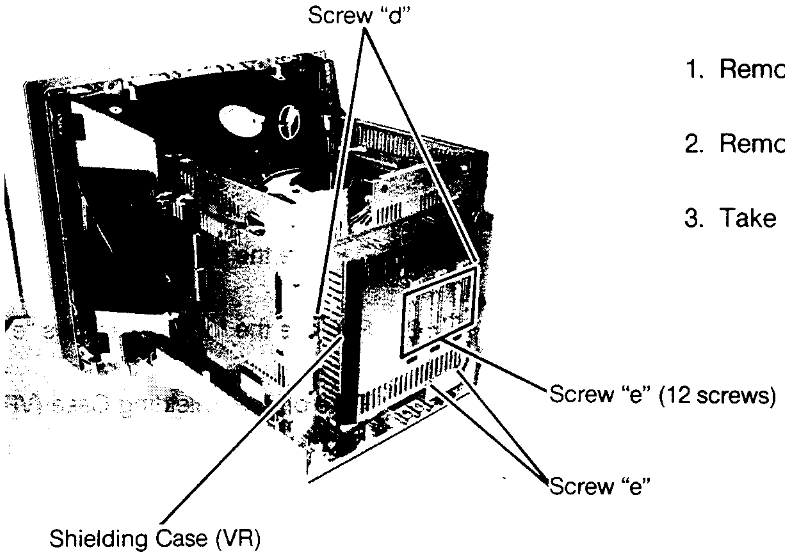

Screw "d"
Screw "e" (12 screws)
Shielding Case (VR)
Screw "e"

1. Remove the two screws "d".
2. Remove the fourteen screws "e".
3. Take off the Shielding Case (VR).

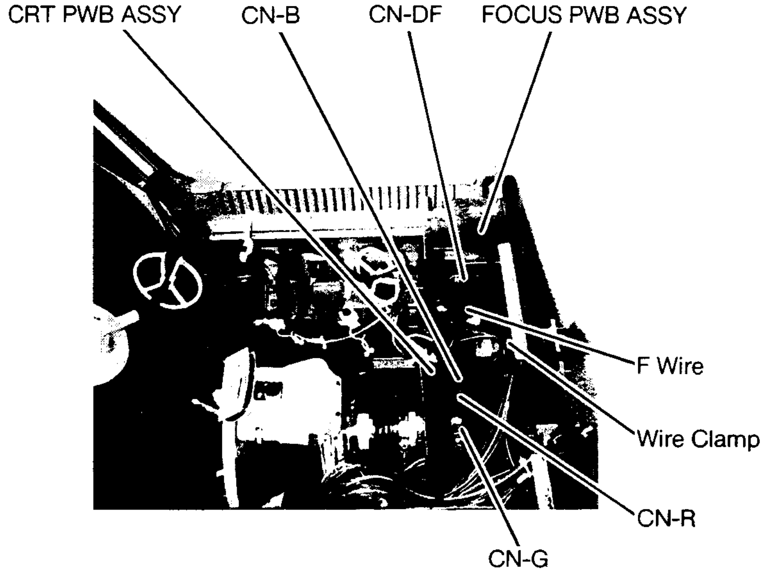

CN-X
Shielding Plate (VF)
CN-HC
CN-BC
Screw "d"
CN-VF
Screw "d"
CN-HT
CN-P
CN-N
CN-C
Screw "d"
Screw "d"
CPU PWB ASSY
CN-TX
CN-S
VIDEO PWB ASSY

4. Disconnect the connectors "CN-TX", "CN-S", "CN-C", "CN-N" and "CN-P" from CPU PWB ASSY.
5. Disconnect the connectors "CN-HT", "CN-HC", "CN-BC", "CN-VF" and "CN-X" from VIDEO PWB ASSY.
6. Remove the four screws "d".
7. Remove the VIDEO PWB ASSY (CPU PWB ASSY) from the Shielding Plate (VF).

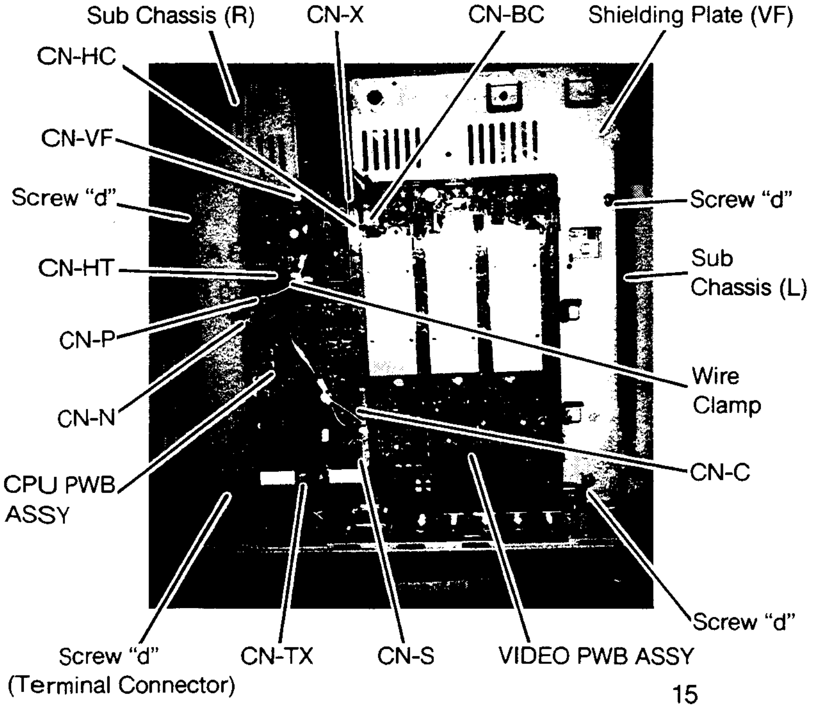
CRT PWB ASSY and DEF PWB ASSY (SDP PWB ASSY, CHP PWB ASSY)


Screw "d"
Screw "e" (12 screws)
Screw "e"
Shielding Case (VR)

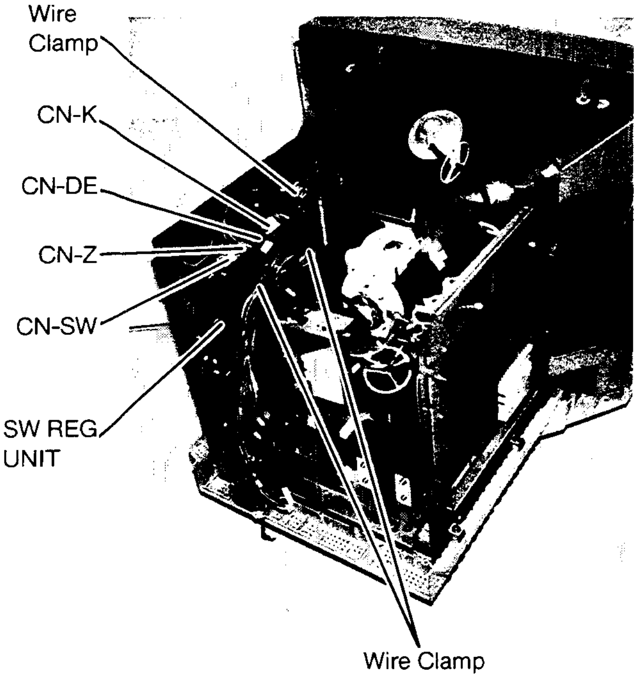
1. Remove the two screws "d".
2. Remove the fourteen screws "e".
3. Take off the Shielding Case (VR).


CRT PWB ASSY
CN-B
CN-DF
FOCUS PWB ASSY
F Wire
Wire Clamp
CN-R
CN-G

4. Untie the wire from the Clamp.
5. Disconnect the connectors "CN-B", "CN-R" and "CN-G" from the CRT PWB ASSY.
6. Disconnect the connector "CN-DF" and unsolder the F wire from the FOCUS PWB ASSY.

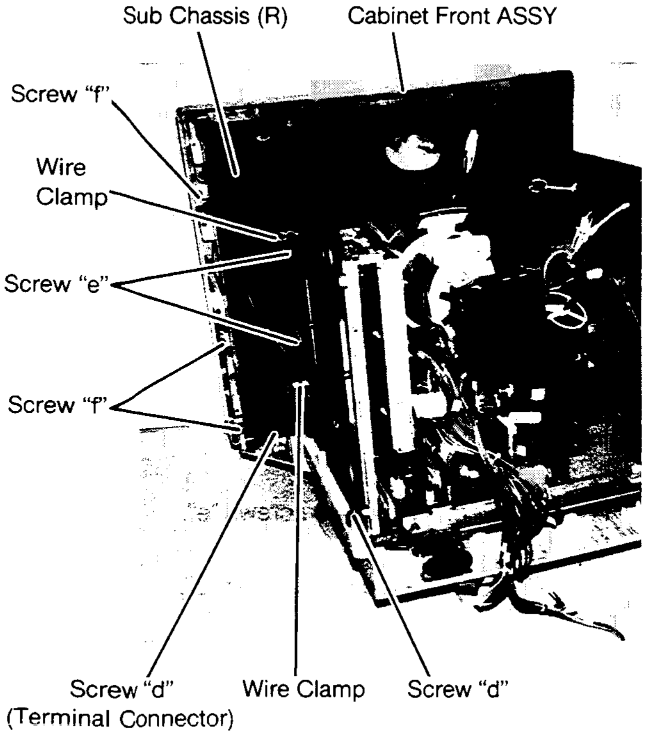

Sub Chassis (R)
CN-X
CN-BC
Shielding Plate (VF)
CN-HC
CN-VF
Screw "d"
CN-HT
CN-P
CN-N
CPU PWB ASSY
Screw "d"
Sub Chassis (L)
Wire Clamp
CN-C
Screw "d"
Screw "d" (Terminal Connector)
CN-TX
CN-S
VIDEO PWB ASSY

7. Disconnect the connectors "CN-TX", "CN-S", "CN-C", CN-N" and "CN-P" from CPU PWB ASSY.
8. Untie the wire from the Clmap.
9. Disconnect the connectors "CN-HT", "CN-HC", "CN-BC", "CN-VF" and "CN-X" from VIDEO PWB ASSY.
10. Remove the four screws "d".
11. Remove the Shielding Plate (VF) from the Sub Chassis (L) and Sub Chassis (R).


Wire
Clamp
CN-K
CN-DE
CN-Z
CN-SW
SW REG
UNIT
Wire Clamp

12. Untie the wires from the Clamps.

13. Disconnect the connectors "CN-SW", "CN-Z", "CN-DE" and "CN-K" from the SW REG UNIT.


Sub Chassis (R)
Cabinet Front ASSY
Screw "f"
Wire
Clamp
Screw "e"
Screw "f"
Screw "d"
(Terminal Connector)
Wire Clamp
Screw "d"

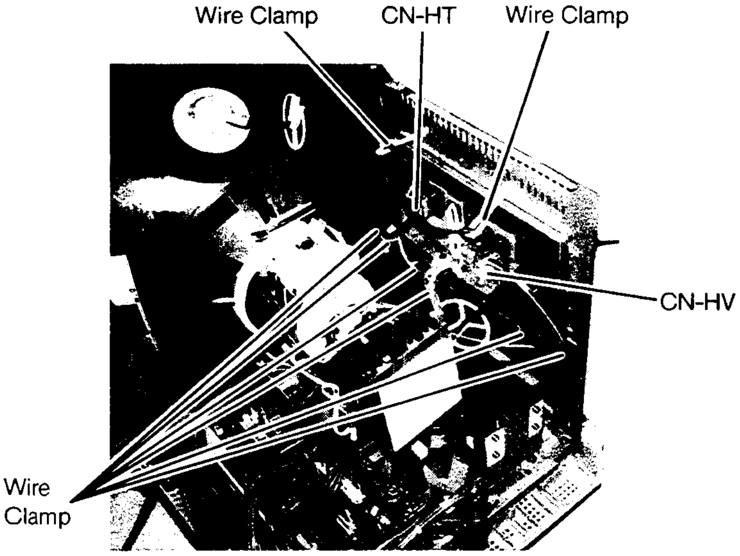
14. Untie the wires from the Clamps.

15. Remove the two screws "e".

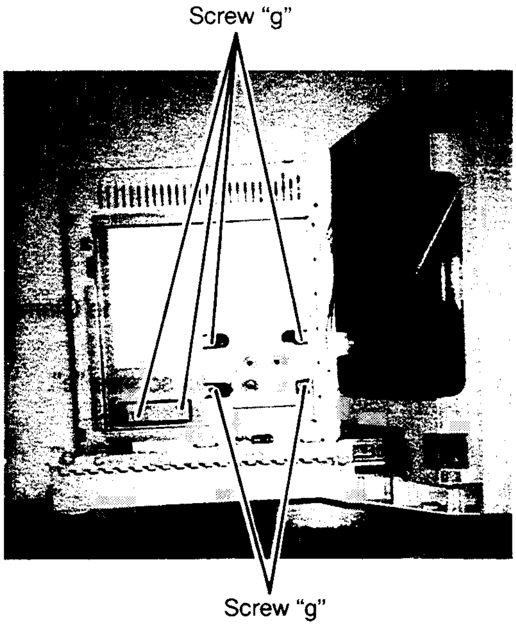
16. Remove the two screws "d".

17. Remove the three screws "f".

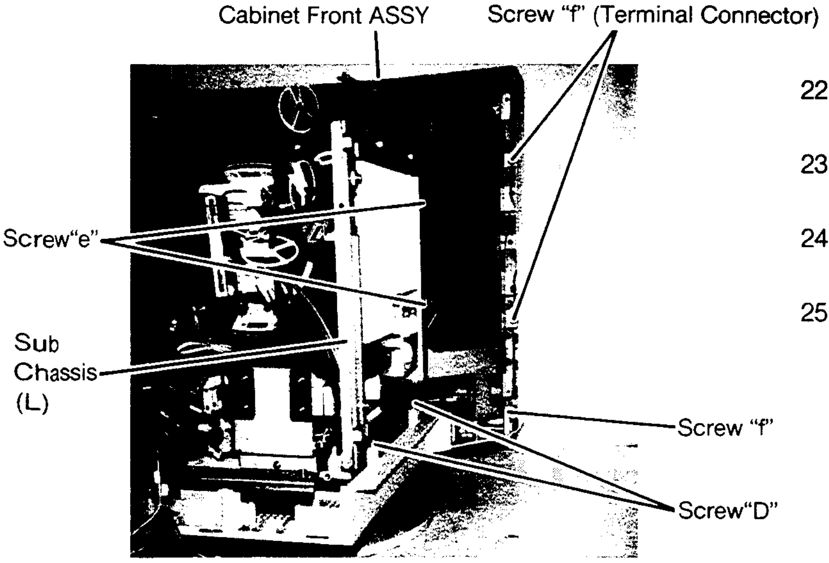
18. Remove the Sub Chassis (R) from the Cabinet Front ASSY.


Wire Clamp
CN-HT
Wire Clamp
CN-HV
Wire Clamp

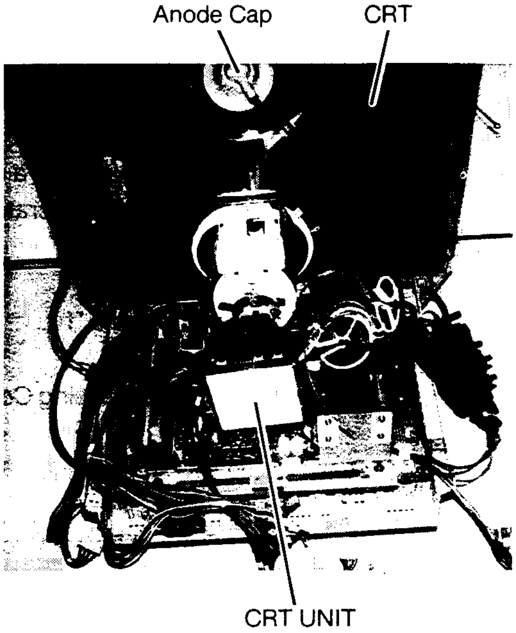
19. Untie the wires from the Clamps.
20. Disconnect the connectors “CN-HV” and “CN-HT”.


Screw “g”
Screw “g”

21. Remove the six screws “g”.

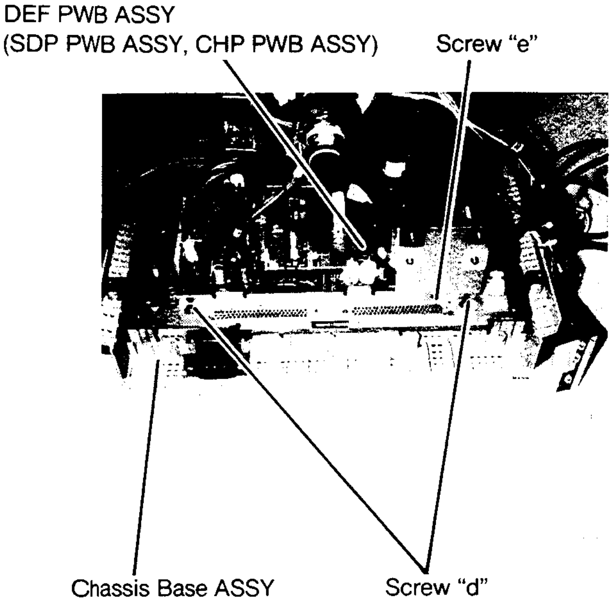

Cabinet Front ASSY
Screw “f” (Terminal Connector)
Screw“e”
Sub Chassis (L)
Screw “f”
Screw“D”

22. Remove the two screws “e”.
23. Remove the two screws “d”.
24. Remove the three screws “f”.
25. Remove the Sub Chassis (L) from the Cabinet Front ASSY.


Anode Cap
CRT
CRT UNIT

26. Remove the Anode Cap from the CRT.
    NOTE:
    Carefully discharge the CRT anode by shorting it to ground before removing Anode Cap.

27. Disconnect the CRT UNIT from the CRT.

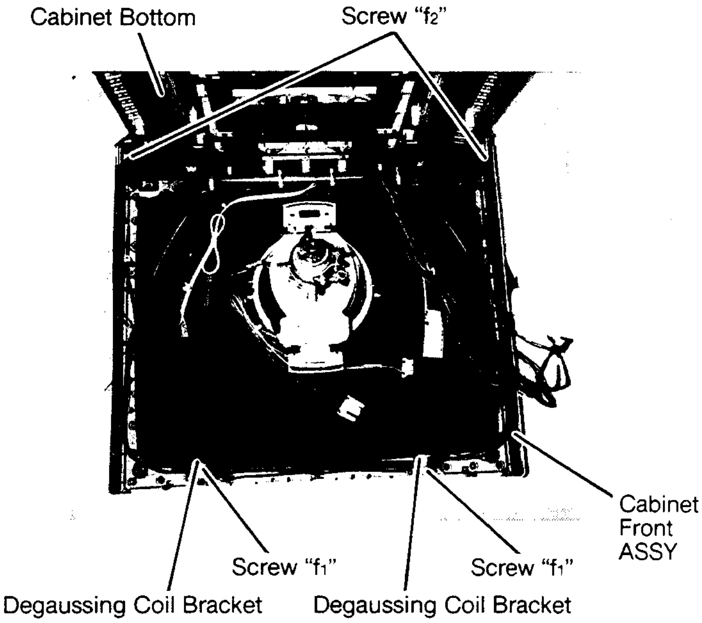

DEF PWB ASSY
(SDP PWB ASSY, CHP PWB ASSY)
Screw "e"
Chassis Base ASSY
Screw "d"

28. Remove the screw "e".

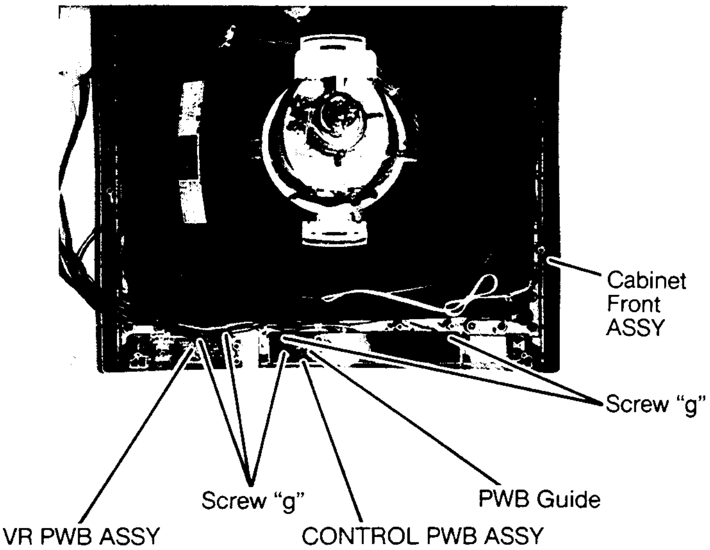
29. Remove the two screws "d".

30. Remove the DEF PWB ASSY (SDP PWB ASSY, CHP PWB ASSY) from the Chassis Base ASSY.

CONTROL PWB ASSY and VR PWB ASSY

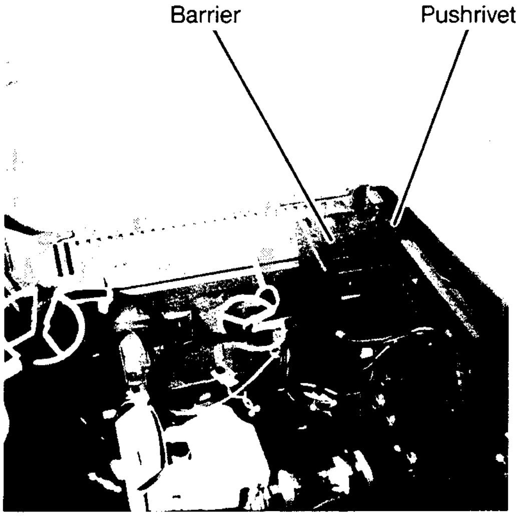

Cabinet Bottom
Screw "f2"
Cabinet Front ASSY
Screw "f1"
Screw "f1"
Degaussing Coil Bracket
Degaussing Coil Bracket

1. Turn the CRT face down on a clean static free surface to Prevent scratching CRT face.
2. Remove the two screws "f1".
3. Remove the two Degaussing Coil Brackets.
4. Remove the two screws "f2".
5. Remove the Cabinet Bottom from the Cabinet front ASSY.

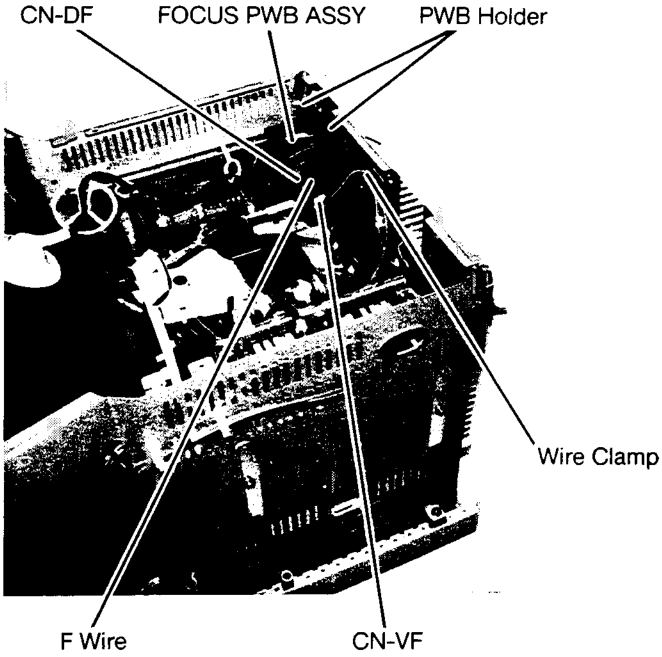

Cabinet Front ASSY
Screw "g"
Screw "g"
PWB Guide
VR PWB ASSY
CONTROL PWB ASSY

6. Remove the five screws "g".
7. Remove the PWB Guide.
8. Remove the CONTROL PWB ASSY and VR PWB ASSY from the Cabinet Front ASSY.

FOCUS PWB ASSY

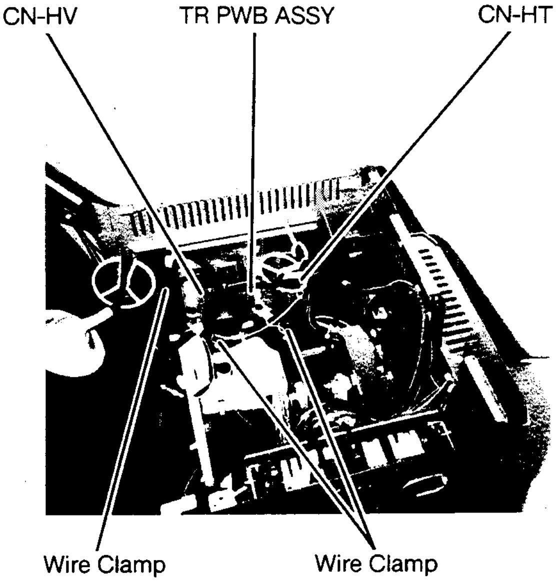

Barrier
Pushrivet

1. Remove the Pushrivet.
2. Take off the Barrier.

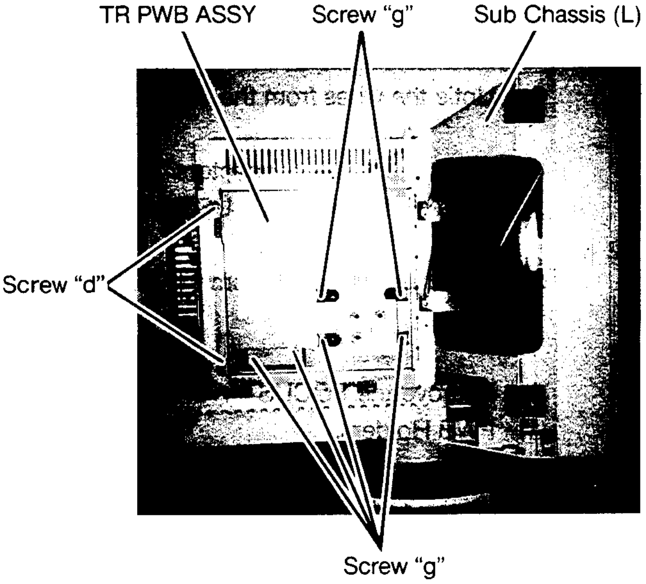

CN-DF
FOCUS PWB ASSY
PWB Holder
Wire Clamp
F Wire
CN-VF

3. Untie the wires from the Clamp.
4. Disconnect the connectors "CN-DF" and "CN-VF" from the FOCUS PWB ASSY.
5. Unsolder the F Wire from the FOCUS PWB ASSY.
6. Remove the FOCUS PWB ASSY from the PWB Holders.

TR PWB ASSY

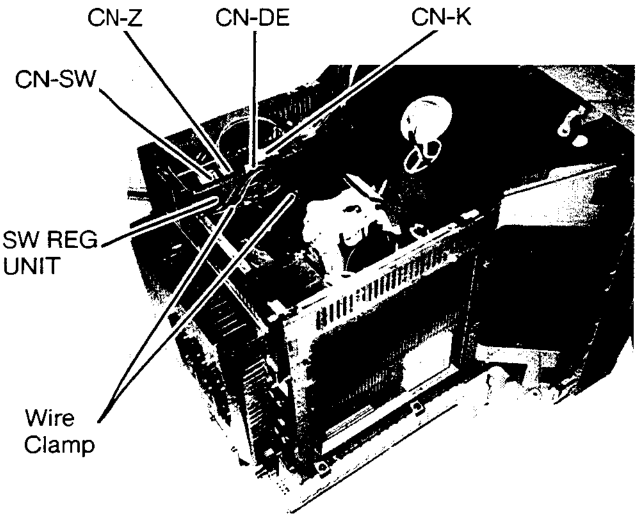

CN-HV
TR PWB ASSY
CN-HT
Wire Clamp
Wire Clamp

1. Untie the wires from the Clamps.
2. Disconnect the connectors "CN-HV" and "CH-HT" from the TR PWB ASSY.

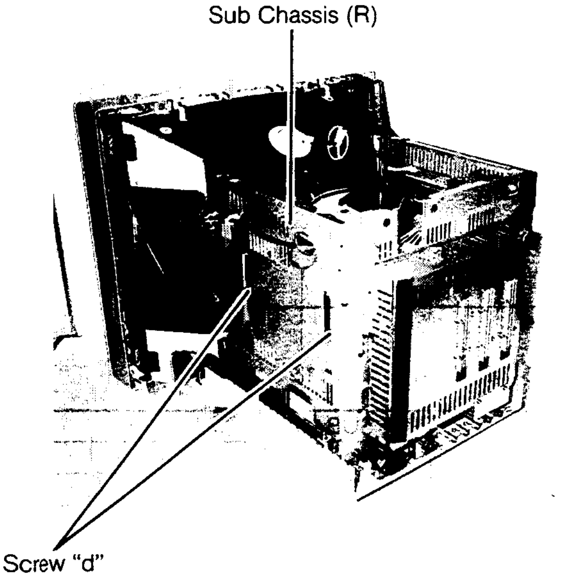

TR PWB ASSY
Screw "g"
Sub Chassis (L)
Screw "d"
Screw "g"

3. Remove the six screws "g".
4. Remove the two screws "d".
5. Remove the TR PWB ASSY from the Sub Chassis (L).

SW REG PWB ASSY


CN-Z
CN-DE
CN-K
CN-SW
SW REG UNIT
Wire Clamp

1. Untie the wire from the Clamp.
2. Disconnect the connectors "CN-SW", "CN-Z", "CN-DE" and "CN-K" from the SW REG UNIT.

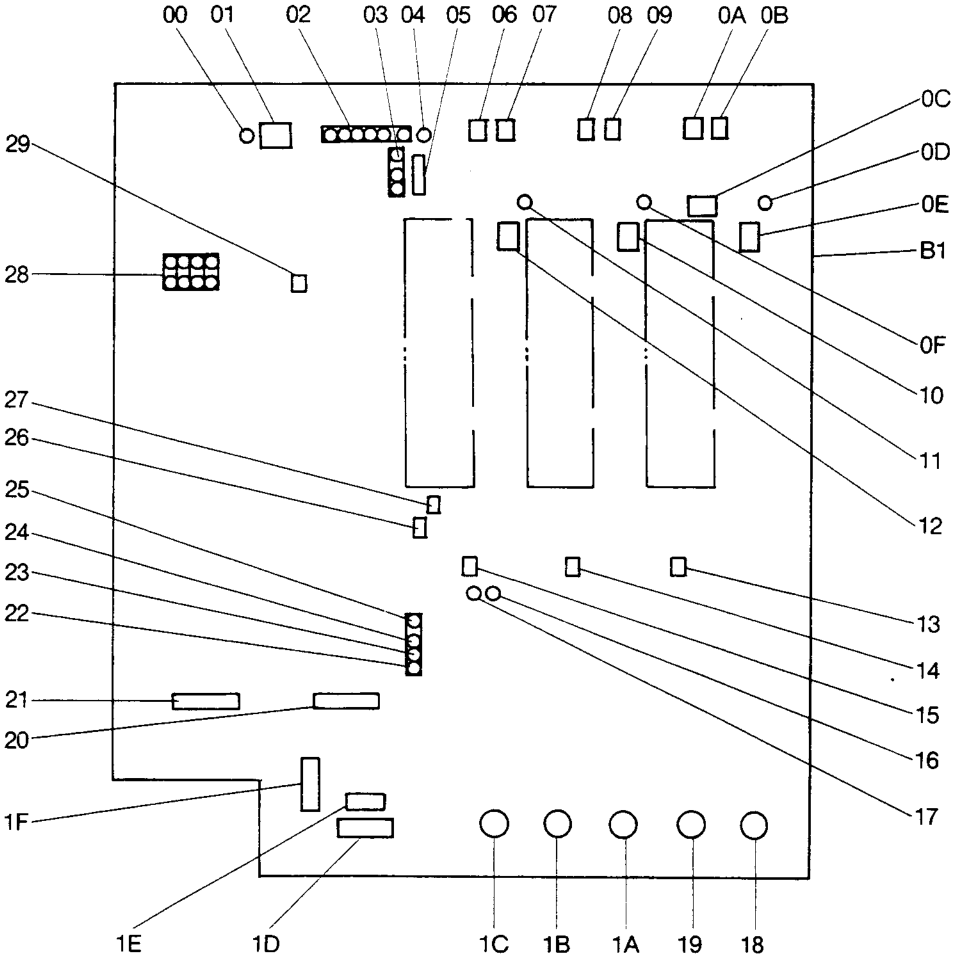

Sub Chassis (R)
Screw "d"

3. Remove the two screws "d".
4. Lift up the SW REG ASSY from the Sub Chassis (R).

SW REG ASSY

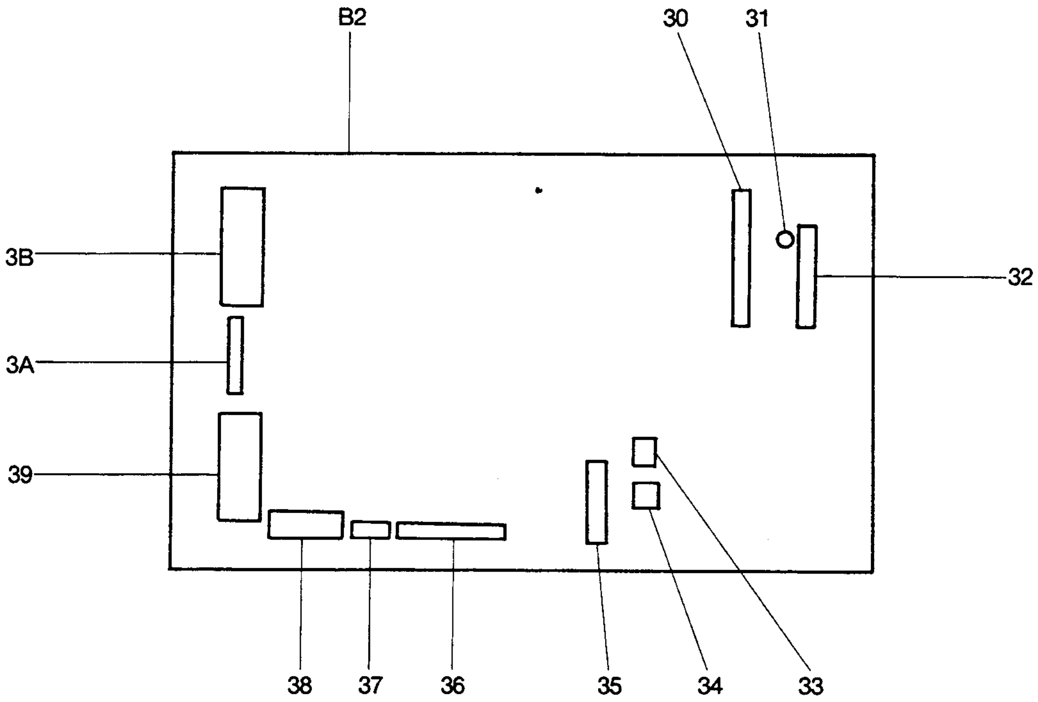
CONNECTOR, CONTROL AND TEST POINT LOCATION DIAGRAM

VIDEO PWB ASSY


00
01
02
03
04
05
06
07
08
09
0A
0B
0C
0D
0E
B1
0F
10
11
12
13
14
15
16
17
29
28
27
26
25
24
23
22
21
20
1F
1E
1D
1C
1B
1A
19
18

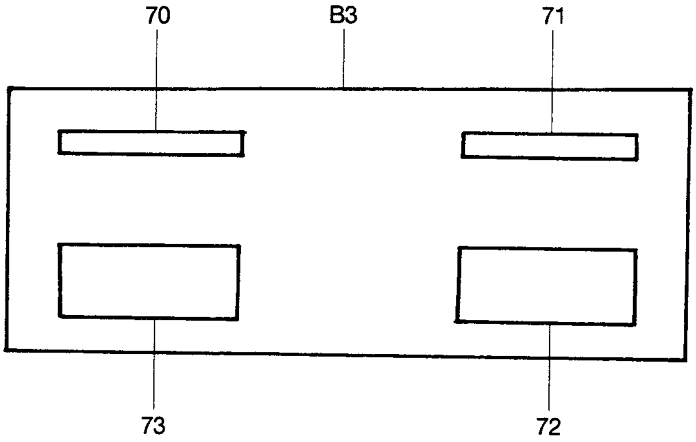
00	TP8A1 TP-12V	16	TP862 SUB GAIN
01	CN-VF	17	TP861 13V
02	CN-X	18	CONNECTOR B
03	CN-HC	19	CONNECTOR G
04	TP8A2 TP-6V	1A	CONNECTOR R
05	CN-BC	1B	CONNECTOR V
06	VR723 G SUB BRIGHT	1C	CONNECTOR H/V
07	VR720 G BIAS	1D	CONNECTOR D-SUB
08	VR724 R SUB BRIGHT	1E	CONNECTOR MINI D-SUB
09	VR721 R BIAS	1F	SW701
0A	VR725 B SUB BRIGHT	20	CN-MB
0B	VR722 B BIAS	21	CN-MA
0C	CN-BB	22	TP865
0D	TP703 TP-B	23	TP864
0E	CN-B	24	TP863
0F	TP702 TP-R	25	TP866
10	CN-R	26	VR861 13V ADJ
11	TP-701 TP-G	27	VR860 SUB GAIN
12	CN-G	28	CN-CT1~CT4
13	VR703 B GAIN	29	VR8A1 +12V ADJ
14	VR702 R GAIN	B1	VIDEO PWB ASSY (PWE-331)
15	VR701 G GAIN		

CPU PWB ASSY


B2
30
31
3B
32
3A
39
38
37
36
35
34
33

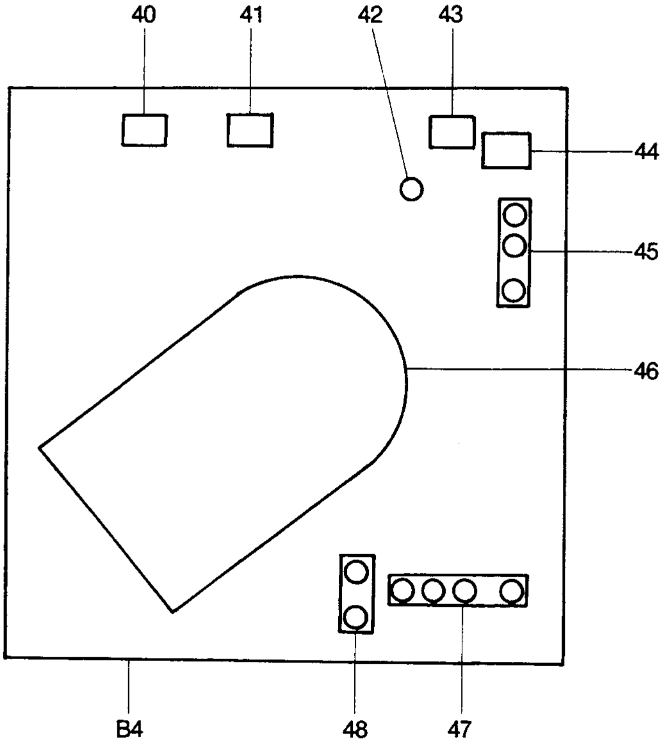
30	CN-N	3A	CN-TX
31	TP-DAC	3B	CN-MA
32	CN-P	B2	CPU PWB ASSY (PWE-330)
33	VR801 REF-U		
34	VR802 REF-L		
35	TP-AUTO		
36	CN-C		
37	CN-S		
38	TP-ADJ		
39	CN-MB		

CN PWB ASSY


70
B3
71
73
72

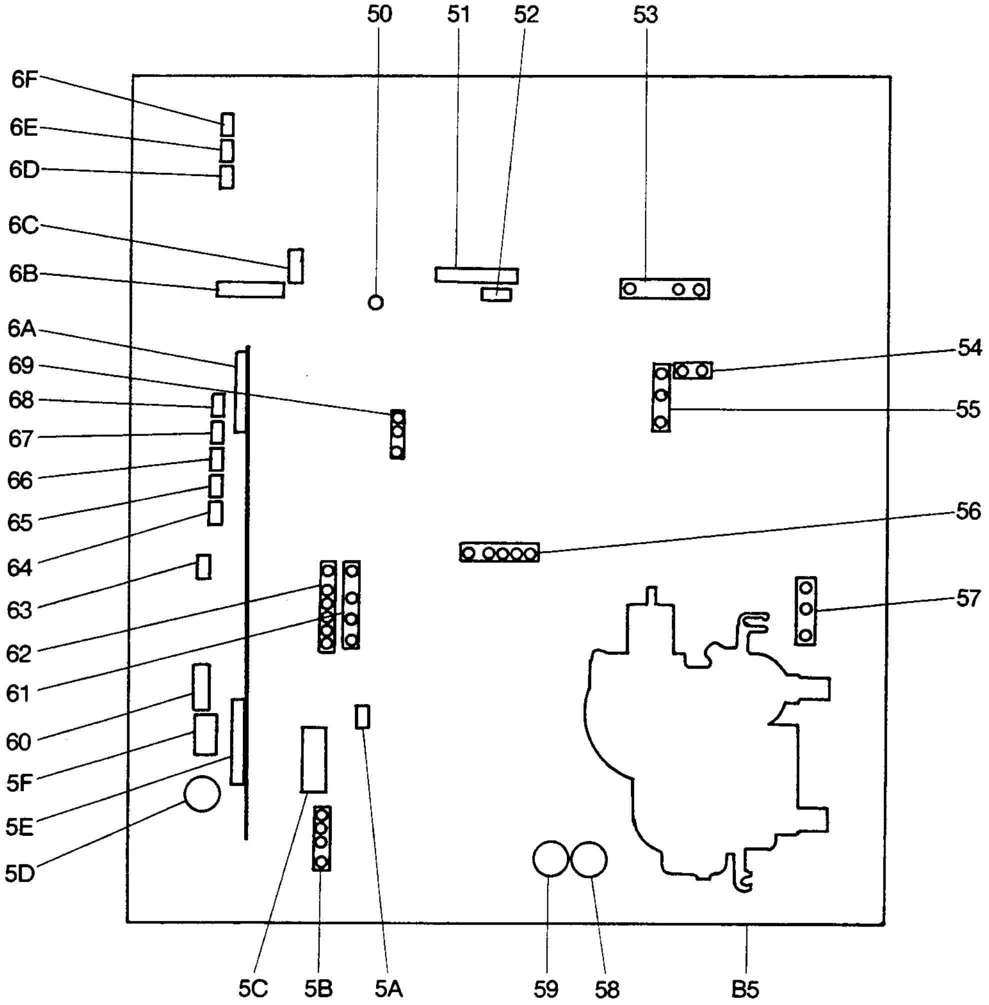
70	CN-MB	73	CN-MB
71	CN-MA	B3	CN PWB ASSY (PWE-328E)
72	CN-MA		

CRT PWB ASSY


40
41
42
43
44
45
46
B4
48
47

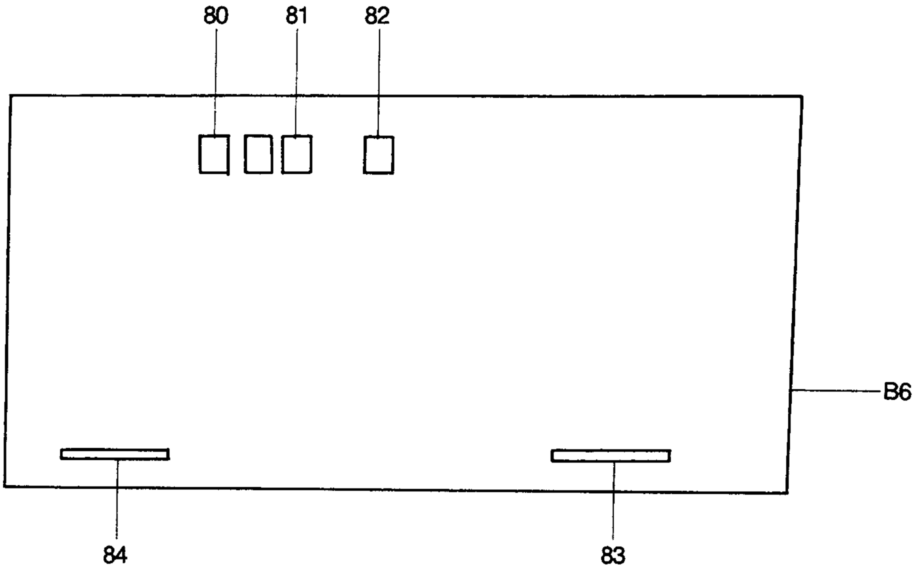
40	CN-B/CN-BB	45	CN-HC
41	CN-R	46	CRT SOCKET
42	TP901	47	CN-E
43	CN-G	48	CN-CE
44	VR901 SUB BIAS	B4	CRT PWB ASSY (PWE328B)

DEF PWB ASSY


50
51
52
53
6F
6E
6D
6C
6B
6A
69
68
67
66
65
64
63
62
61
60
5F
5E
5D
54
55
56
57
5C
5B
5A
59
58
B5

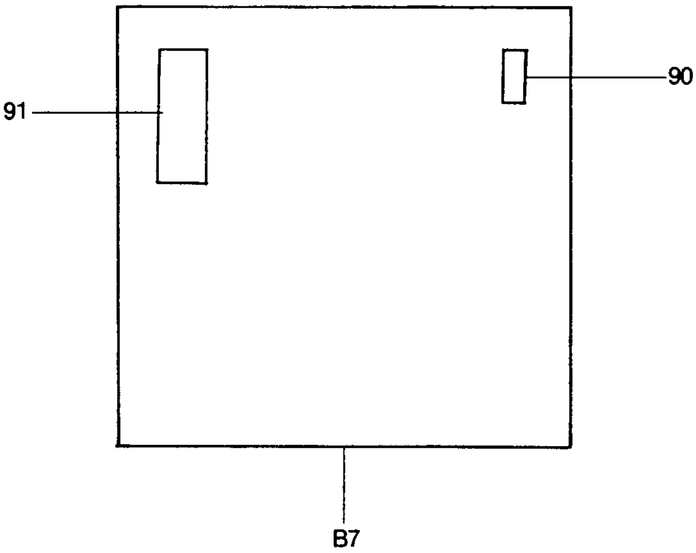
50	TP471 18V	61	CN-K
51	CN-N	62	CN-X
52	CN-S	63	VR590 H SIZE
53	CN-HT	64	VR401 V HOLD
54	CN-CT	65	VR431 V LIN (C)
55	CN-HDY	66	VR441 V LIN (S)
56	CN-DF	67	VR411 V BIAS
57	CN-HV	68	VR421 V HEIGHT
58	VR5D1 HV ADJ1	69	CN-VDY
59	VR5E1 HV ADJ2	6A	CN-SA
5A	CN-DR	6B	CN-P
5B	CN-E	6C	VR461
5C	CN-CP	6D	VR56C H HOLD 3
5D	VR2001 PROTECTOR	6E	VR56E H HOLD 2
5E	CN-SB	6F	VR56A H HOLD 1
5F	CN-TP	B5	DEF PWB ASSY (PWE-329)
60	SW401 CUTOFF ADJ		

SDP PWB ASSY


80
81
82
B6
84
83

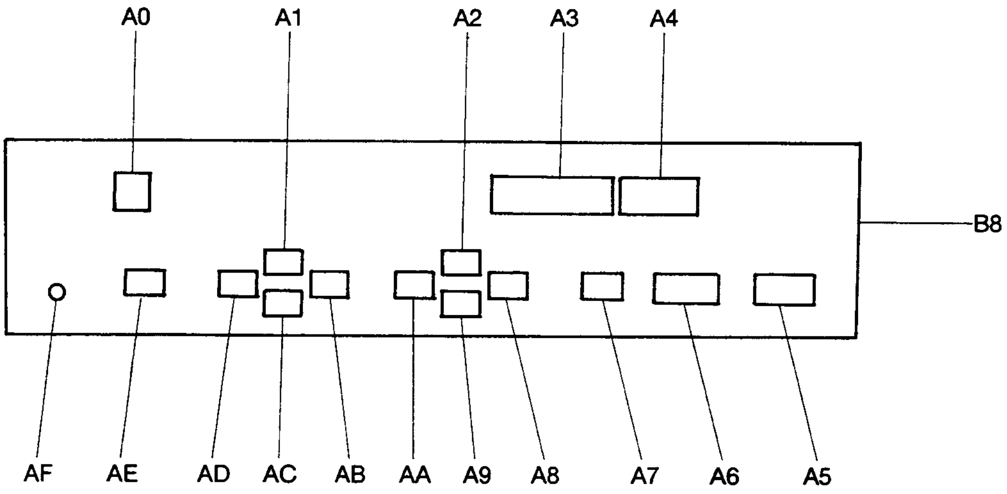
80	VR5S2 SIDE PIN 1	B6	SDP PWB ASSY (PWE-339A)
81	VR5W1 PARALELL		
82	VR5U1 SIDE PIN 3		
83	CN-SB		
84	CN-SA		

CHP PWB ASSY



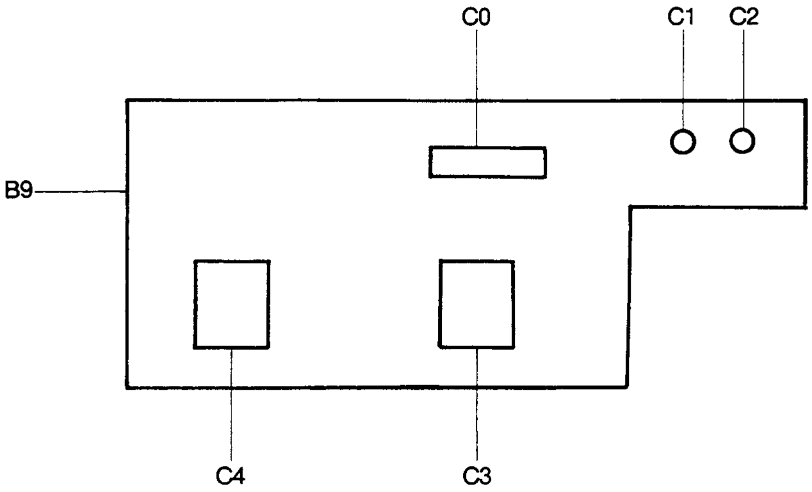
90	CN-DR	B7	CHP PWB ASSY (PWE-339B)
91	CN-CP		

CONTROL PWB ASSY


A0
A1
A2
A3
A4
B8
AF
AE
AD
AC
AB
AA
A9
A8
A7
A6
A5

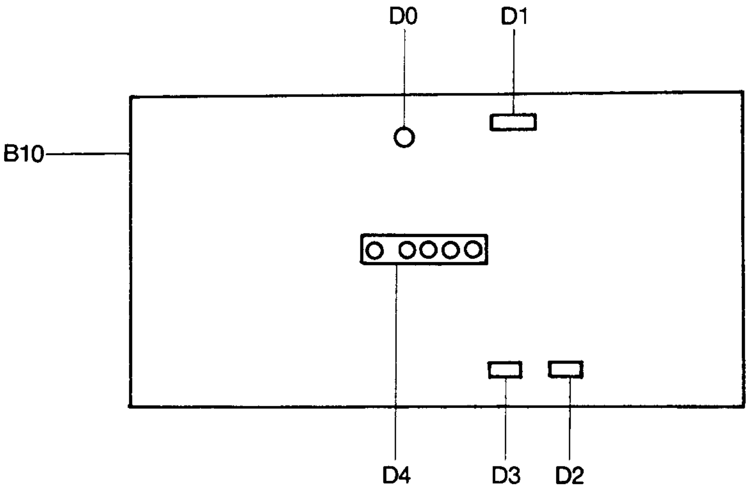
A0	CN-DE	AA	SW106 POSITION
A1	SW105 SIZE	AB	SW109 SIZE
A2	SW103 POSITION	AC	SW104 SIZE
A3	CN-C	AD	SW108 SIZE
A4	CN-TX	AE	SW110 MEMORY RECALL
A5	SW111	AF	LED D120 MODE STATUS
A6	SW112	B8	CONTROL PWB ASSY (PWE-328C)
A7	SW101 DEGAUSS		
A8	SW107 POSITION		
A9	SW102 POSITION		

VR PWB ASSY


C0
C1
C2
B9
C4
C3

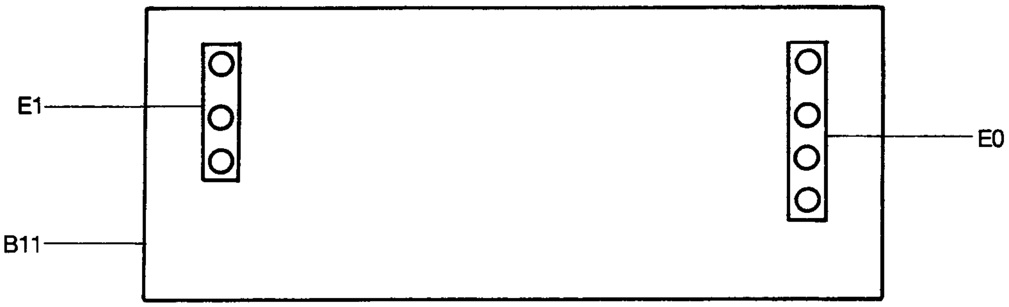
C0	CN-BC	B9	VR PWB ASSY (PWE-328D)
C1	LED D121 POWER		
C2	LED D122 POWER		
C3	VR102 BRIGHTNESS		
C4	VR101 CONTRAST		

FOCUS PWB ASSY


D0
D1
B10
D4
D3
D2

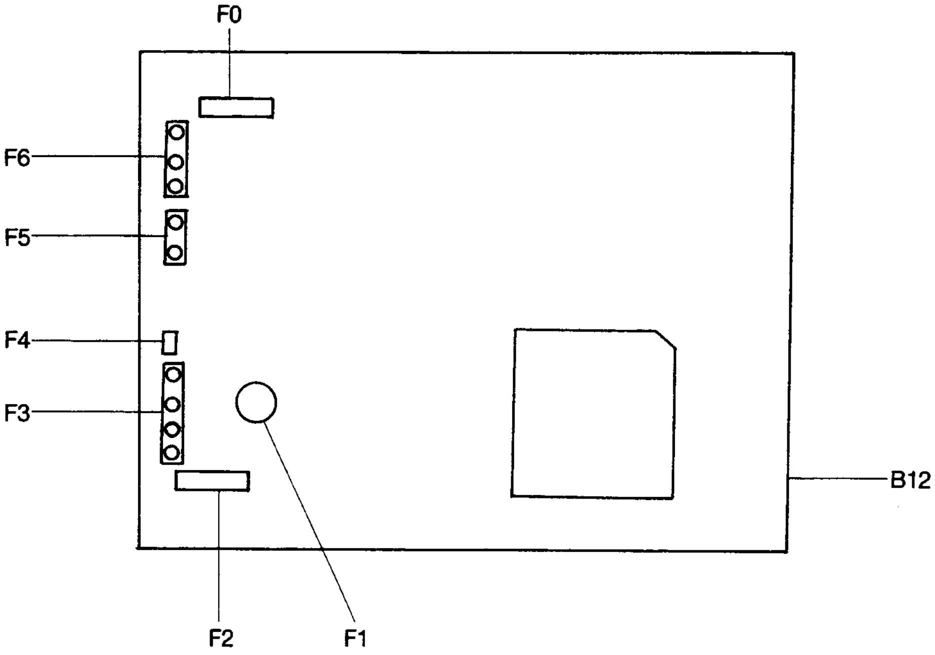
D0	F WIRE	B10	FOCUS PWB ASSY (PWE-328A)
D1	CN-VF		
D2	VR951 H FOCUS		
D3	VR952 V FOCUS		
D4	CN-DF		

TR PWB



E0	CN-HT	B11	TR PWB (PWE-332)
E1	CN-HV		

SW REG PWB ASSY


F0
F6
F5
F4
F3
B12
F2
F1

F0	FUSE F601	F5	CN-Z
F1	VR651	F6	CN-SW
F2	FUSE F651	B12	SW REG PWB ASSY PWE-341(JC-2141UMA /JC-2142UMA) PWE-319 (JC-2141UMB/B(EE)/R)
F3	CN-K		
F4	CN-C		

ADJUSTMENT PROCEDURES

Application

These specifications outline the adjustment procedures for Model JC-2141UMA/B/B(EE)/R and JC-2142UMA 21 inch color monitor.

Standard Adjustment Conditions

1. Power Supply Voltage : AC 120V 60Hz (JC-2141UMA/JC-2142UMA)
   AC 220V 50Hz (JC-2141UMB/B(EE)/R)

2. Warm Up : Adjust this monitor after leaving power on for a minimum of 30 minutes.

3. Signals :

   Video : Analog 0.7V_{P-P} 75Ω Positive Polarity
   Analog Sync on Green 75Ω termination
   · Video 0.7V Positive Polarity
   · Sync 0.3V Negative Polarity

   Sync : TTL level
   H/V Separate Positive/Negative Polarity
   H/V Composite Positive/Negative Polarity
   Sync on Green 0.3V_{P-P} Negative Polarity

   Unless instructed otherwise, input the video signal to the 15 D-SUB connector and proceed with adjustments.

4. Adjustment Magnetic Fields

4.1 Do not apply an external magnetic fields.
Note: Model JC-2141UMR is applied an extermal vertical magnetic field as follows.
Vertical magnetic field: — 0.4 Gauss
4.2 The monitor should be facing east.
4.3 Before adjusting, degauss the entire unit by external degaussing coil.

Note: 1. When heat-running and rough adjusting, etc, make H SIZE fully right (MAX) by using H SIZE SW (user control) and adjust VR590 (H SIZE VR) so that the back-raster is approx. 100% scan.
(Connect a video signal to activate the user control SW.)

2. Signal generator notes.
When using a LVG-1600 generator, it should be calibrated with a LVG-1603. In the event of a discrepancy, use the LVG-1603's output as the standard. Focus adjustments should be made with a VG-819 or VG-807.

Adjustment Procedures

Service Adjustment Jig

1. Outline
2. Operating Panel
3. Schematic Diagram

Adjustment

1. Initial Setting

Pre-adjustment

1. DEF PWB
2. VIDEO PWB

Main Adjustment

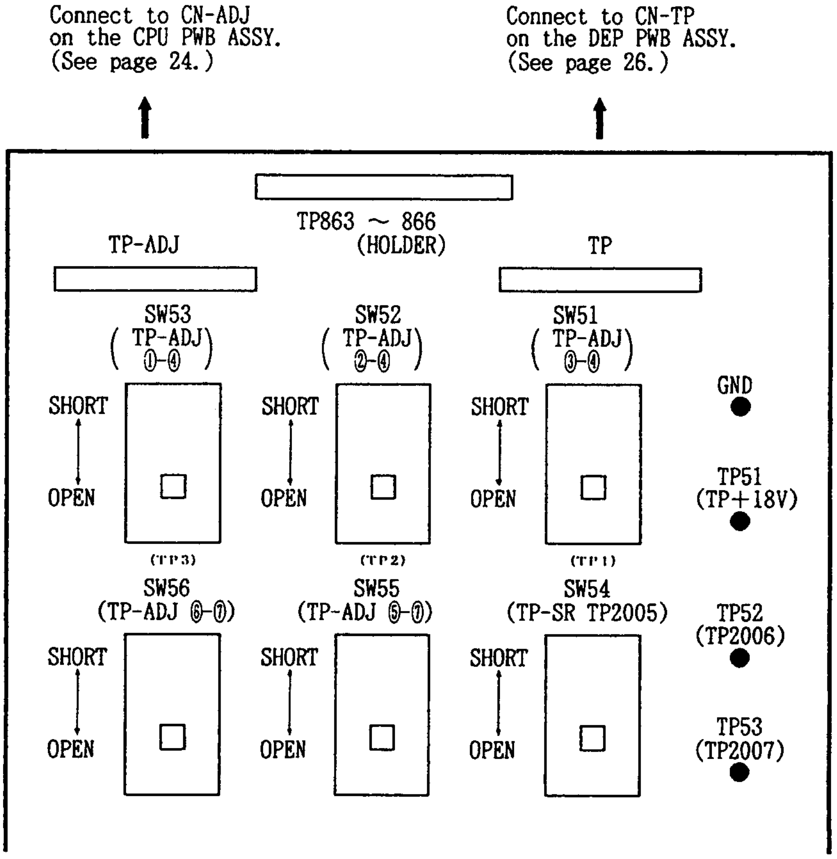
1. Control Settings
2. 13V Adjutment
3. DAC Reference Voltage Adjustment
4. V HOLD Adjustment
5. Horizontal Free-run Adjustment
6. High Voltage Adjustment
7. High Protector Adjustment
8. Raster Horizontal Centering Adjustment
9. Horizontal Width Adjustment
10. Side Pincushion Adjustment
11. Screen Distortion Adjustment
12. Vertical Bias Adjustment
13. Vertical Linearity Adjustment
14. Vertical Height Adjustment
15. Preset Adjustment
16. Video Amplitude Adjustment
17. Cut Off Adjustment
18. Cut Off Fine Adjustment
19. Sub Brightness Adjustment
20. Color Mode Color Adjustment
21. Focus Adjustment
22. Purity Adjustment
23. Convergence Adjustment
24. Adjustment Signal Timing

Service Adjustment Jig

1. Outline

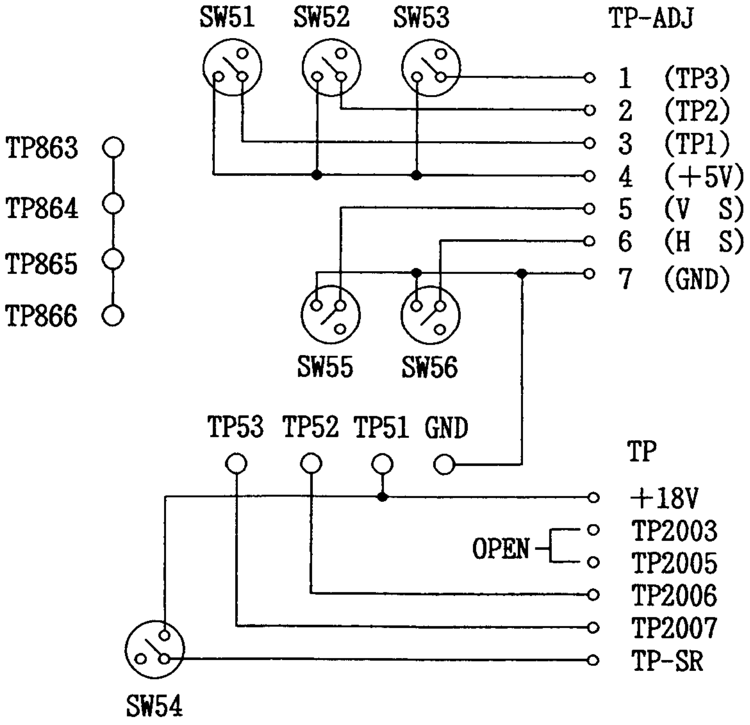
1) 18V Adjustment (See page 35.)	· TP51 (TP18V)　Voltage pickup	
2) V HOLD Adjustment (See page 39.)	· SW55 (TP-ADJ ⑤—⑦) SHORT	
3) H Free-run Adjustment (See page 39.)	· SW56 (TP-ADJ ⑥—⑦) SHORT	
4) High Volage Adjustment (See page 40.)	· SW54 (TP-SR　TP2005) SHORT	
5) High Voltage Protector Adjustment (See page 40.)	· TP52 (TP2006)—TP53 (TP2007) Voltage adjustment	
6) Side Pincushion Adjustment (See page 41.)	· SW53 (TP-ADJ ①—④) SHORT · SW51 (TP-ADJ ③—④) SHORT	
7) Preset Adjustment (See page 43.)	· SW51 (TP-ADJ ③—④) · SW52 (TP-ADJ ②—④) · SW53 (TP-ADJ ①—④)	Same SHORT
8) Video Amplitude Adjustment (See page 45.)	· SW52 (TP-ADJ ②—④) SHORT	
9) Cut Off Adjustment and Color Mode Color Adjustment (See page 46 and 48.)	· TP863~TP866 (HOLDER) SHORT	
10) Color Mode Color Adjustment (See page 48.)	· SW52 (TP-ADJ ②—④) SHORT	

2. Operating Panel


Connect to CN-ADJ
on the CPU PWB ASSY.
(See page 24.)
Connect to CN-TP
on the DEP PWB ASSY.
(See page 26.)
TP863 ~ 866
(HOLDER)
TP-ADJ
TP
SW53
(TP-ADJ ①-④)
SW52
(TP-ADJ ②-④)
SW51
(TP-ADJ ③-④)
GND
SHORT
OPEN
(TP3)
(TP2)
(TP1)
TP51
(TP+18V)
SW56
(TP-ADJ ⑥-⑦)
SW55
(TP-ADJ ⑤-⑦)
SW54
(TP-SR TP2005)
TP52
(TP2006)
TP53
(TP2007)

5FG/6FG SIDE

3. Schematic Diagram


SW51
SW52
SW53
TP-ADJ
1 (TP3)
2 (TP2)
3 (TP1)
4 (+5V)
5 (V S)
6 (H S)
7 (GND)
TP863
TP864
TP865
TP866
SW55
SW56
TP53
TP52
TP51
GND
TP
+18V
OPEN
TP2003
TP2005
TP2006
TP2007
TP-SR
SW54

Adjustment

1. Initial Setting

Before adjusting monitor, set the position of the controls as follows:

1.1 DEF PWB

VR590 (H SIZE)	Fully left (MIN)
VR5D1 (H V ADJ1)	Fully left (MIN)
VR56A (H HOLD1)	Mechanical center
VR56E (H HOLD2)	Mechanical center
VR56C (H HOLD3)	Mechanical center
VR2001 (H V PROTECTOR)	Fully left (MIN)
VR461 (18V ADJ)	Fully left (MIN)
VR411 (V BIAS)	Mechanical center
SCREEN CONTROL	Fully left (MIN)
VR401 (V HOLD)	Mechanical center
SW401 (CUT OFF ADJ)	To the left (OPEN)

1.2 VIDEO PWB

VR8A1 (12V ADJ)	Mechanical center
VR861 (13V ADJ)	Fully left (MIN)

Pre-adjustment (Production Line Procedures)

1. DEF PWB

1.1 18V Adjustment

(Use adjustment jig. Voltage picked up TP51 (TP+18) on the jig.)

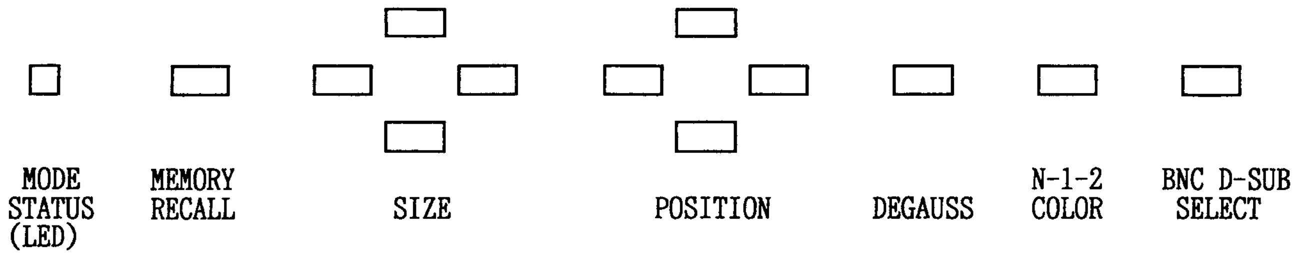
1.1.1 Connect 29V power.
1.1.2 Adjust VR461 so that TP471 (18V) is 18±0.05VDC.

Note: When adjusting, VR461 be careful not to exceed 20V at TP471.

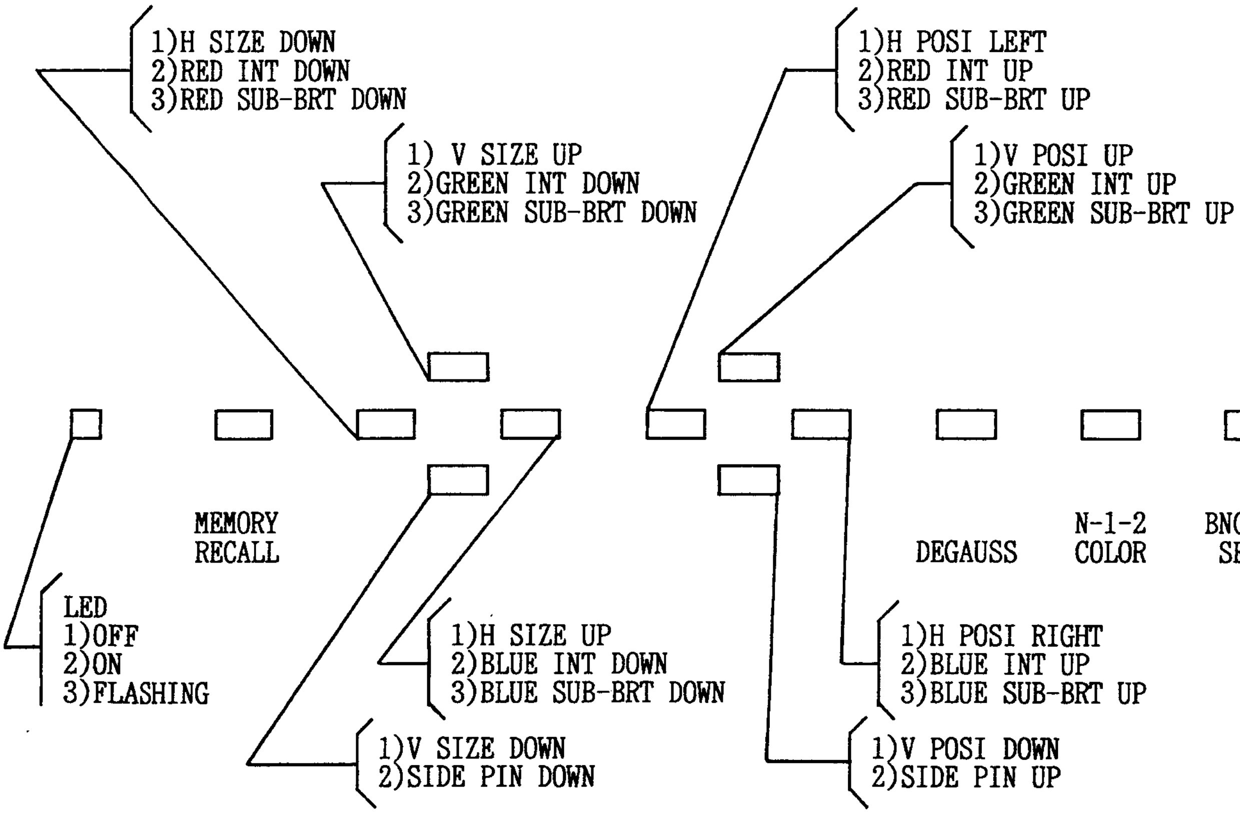
2. VIDEO PWB

2.1 12V Adjustment. Signal 12

2.1.1 Supply +29V±0.1VDC between ×3 (+29V) and ×6 (GND).
2.1.2 Supply H sync (Signal 12 56kHz) to ×4.
2.1.3 Connect the dummy resistance (20Ω±10% 5W or more) between HC2 and HC3.
2.1.4 Adjust VR8A1 so that TP-12V is 12V±0.05VDC.

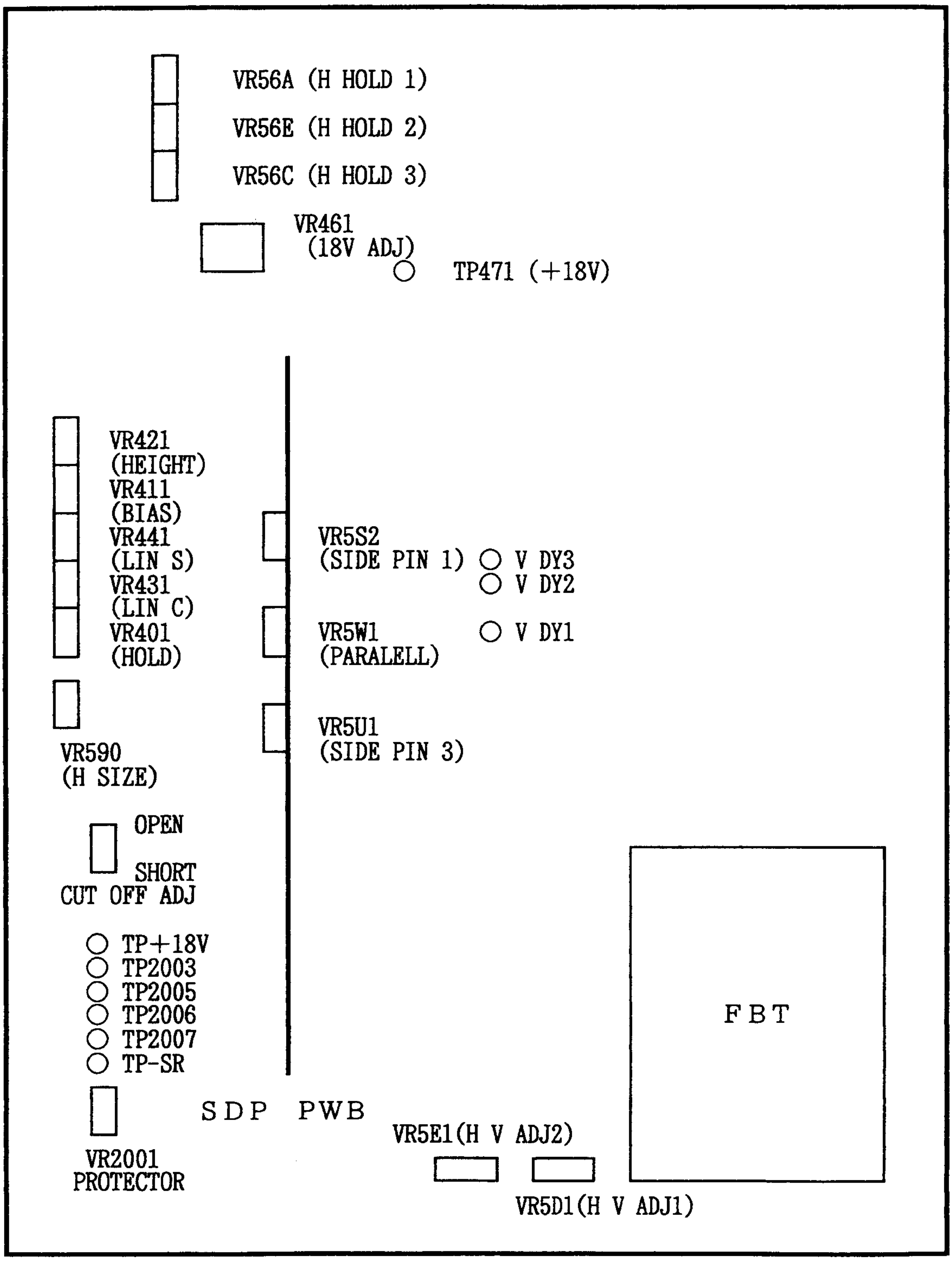

MODE
STATUS
(LED)
MEMORY
RECALL
SIZE
POSITION
DEGAUSS
N-1-2
COLOR
BNC D-SUB
SELECT

(Fig. 1-a) Control Panel

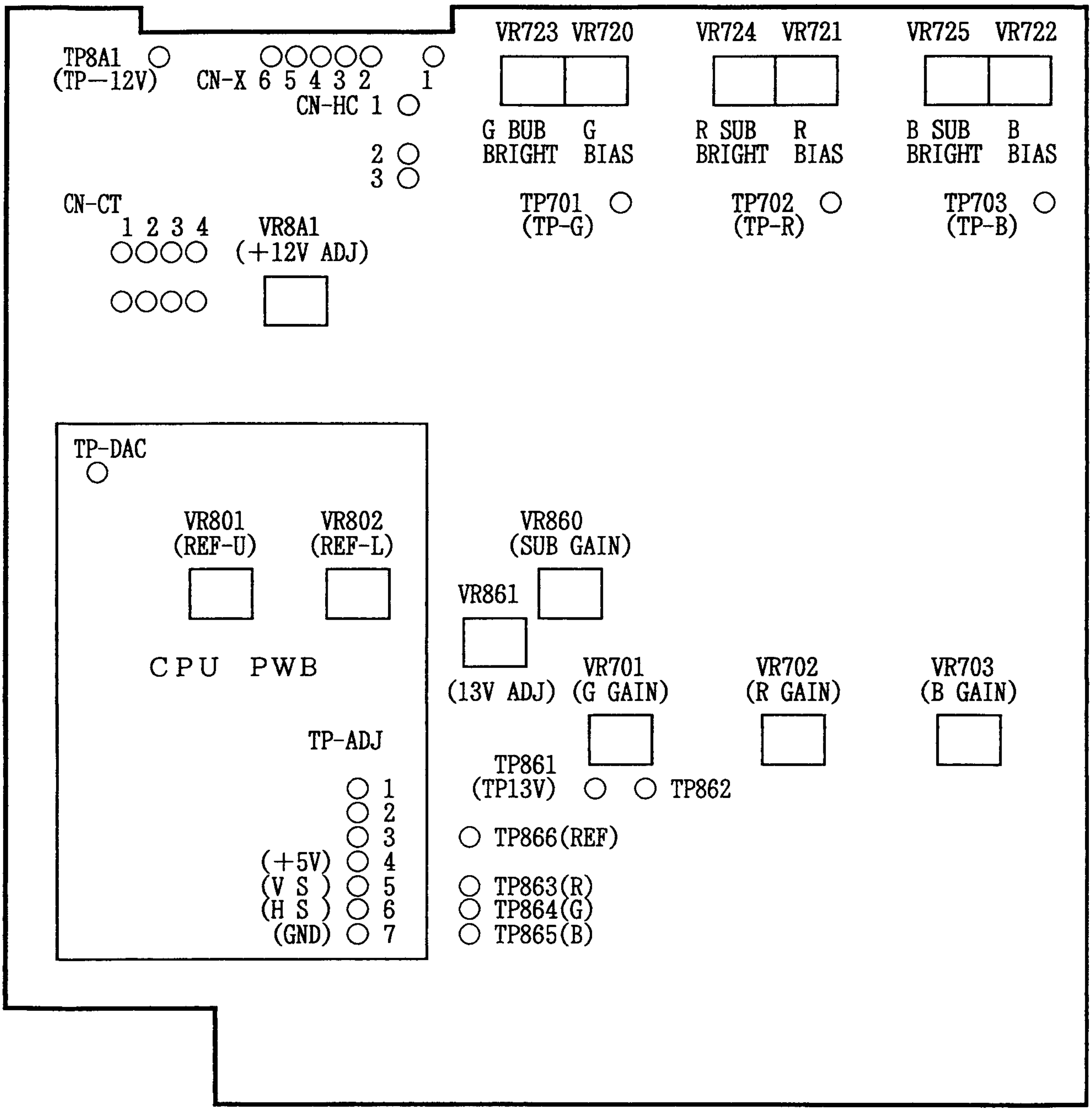

1)H SIZE DOWN
2)RED INT DOWN
3)RED SUB-BRT DOWN
1) V SIZE UP
2)GREEN INT DOWN
3)GREEN SUB-BRT DOWN
1)H POSI LEFT
2)RED INT UP
3)RED SUB-BRT UP
1)V POSI UP
2)GREEN INT UP
3)GREEN SUB-BRT UP
MEMORY
RECALL
DEGAUSS
N-1-2
COLOR
BNC D-SUB
SELECT
LED
1)OFF
2)ON
3)FLASHING
1)H SIZE UP
2)BLUE INT DOWN
3)BLUE SUB-BRT DOWN
1)H POSI RIGHT
2)BLUE INT UP
3)BLUE SUB-BRT UP
1)V SIZE DOWN
2)SIDE PIN DOWN
1)V POSI DOWN
2)SIDE PIN UP

NOTE: 1) User control level 1
2) User control level 2
3) User control level 3

(Fig. 1-b) User Control Switch Function


VR56A (H HOLD 1)
VR56E (H HOLD 2)
VR56C (H HOLD 3)
VR461
(18V ADJ)
TP471 (+18V)
VR421
(HEIGHT)
VR411
(BIAS)
VR441
(LIN S)
VR431
(LIN C)
VR401
(HOLD)
VR5S2
(SIDE PIN 1)
V DY3
V DY2
VR5W1
(PARALELL)
V DY1
VR590
(H SIZE)
VR5U1
(SIDE PIN 3)
OPEN
SHORT
CUT OFF ADJ
FBT
TP+18V
TP2003
TP2005
TP2006
TP2007
TP-SR
SDP PWB
VR5E1(H V ADJ2)
VR2001
PROTECTOR
VR5D1(H V ADJ1)

(Fig. 2) DEF PWB / SDP PWB Layout


TP8A1
(TP—12V)
CN-X 6 5 4 3 2 1
CN-HC 1
2
3
CN-CT
1 2 3 4
VR8A1
(+12V ADJ)
VR723 VR720
G BUB BRIGHT
G BIAS
VR724 VR721
R SUB BRIGHT
R BIAS
VR725 VR722
B SUB BRIGHT
B BIAS
TP701 (TP-G)
TP702 (TP-R)
TP703 (TP-B)
TP-DAC
VR801 (REF-U)
VR802 (REF-L)
CPU PWB
TP-ADJ
1
2
3
(+5V) 4
(V S) 5
(H S) 6
(GND) 7
VR860 (SUB GAIN)
VR861
(13V ADJ)
VR701 (G GAIN)
VR702 (R GAIN)
VR703 (B GAIN)
TP861 (TP13V)
TP862
TP866(REF)
TP863(R)
TP864(G)
TP865(B)

(Fig. 3) VIDEO PWB/CPU PWB Layout

Main Adjustment (Service Procedures)

1. Control Settings

Unless instructed otherwise, perform all adjustments with these controls in the following positions:

VR101	CONTRAST CONTROL : MAX(Fully right)
VR102	BRIGHTNESS CONTROL : At point where the back raster disappears.
SW111	BNC/D-SUB SW : D-SUB
SW112	COLOR MODE SW : N
SW701	SYNC SW : OFF (Lower position)

2. 13V Adjustment Signal 2 27kHz

2.1 Turn VR861 fully right so that TP861(TP-13V) is 13±0.1VDC.

3. DAC Reference Voltage Adjustment Signal 2, 3

3.1 Receive signal 3 (79.0kHz).
3.2 Adjust VR801 so that TP-DAC (H-f/V output) voltage is 11.00±0.05VDC.
3.3 Receive Signal 2 (27.0KHz).
3.4 Adjust VR802 so that TP-DAC (H-f/V output) voltage is 1.00±0.05VDC.

4. V HOLD Adjustment
(Use adjustment jig.)

4.1 Short TP-ADJ pin 5 (V S) and 7 (GND) on the CPU PWB.
(Jig SW55 (TP-ADJ ⑤—⑦) SHORT.)
4.2 Adjust VR401 (V HOLD) so that VDY1 is 40±0.5Hz.
4.3 Remove the short between TP-ADJ pin 5 and 7.
(Jig SW55 (TP-ADJ ⑤—⑦) OPEN.)

5. Horizontal Free-run Adjustment
(Use adjustment jig.)

5.1 Short TP-ADJ pin 6 (H S) and 7 (GND) on the CPU PWB and cut H Sync Signal to H OSC circuit.
(Jig SW56 (TP-ADJ ⑥—⑦) SHORT and cut H Sync Signal to H OSC circuit.)
5.2 Receive signal 13 (64.3kHz) and adjust the free-run until the screen is one by using VR56A (H HOLD 1).
5.3 Receive signal 1 (44.0kHz) and adjust the free-run until the screen is one by using VR56E (H HOLD 2).
5.4 Receive signal 4 (31.5kHz) and adjust the free-run until the screen is one by using VR56C (H HOLD 3).
5.5 Remove the short between TP-ADJ pin 6 and 7.
(Jig SW56 (TP-ADJ ⑥—⑦) OPEN.)

6. High Voltage Adjustment Signal 2 27kHz
(Perform ONLY when DEF PWB is replaced.)
(Jig SW54 (TP-SR TP2005) SHORT.)

6.1 Receive the all black pattern.
6.2 Turn BRIGHTNESS CONTROL, CONTRAST CONTROL and SCREEN CONTROL fully left (MIN).

(Jig SW54 (TP-SR TP2005) SHORT.)

6.3 Adjust VR5D1 (H V ADJ1) so that the high voltage is 26.0±0.3kV.
6.4 Adjust VR5E1 (H V ADJ2) so that the high voltage is 27.0±0.3kV.

(Jig SW54 (TP-SR TP2005) OPEN.)

Note: When adjusting VR5D1, VR5E1 should be turn fully left (MIN).

After adjusting VR5D1 and VR5E1, seal with a silicon glue and cap.

7. High Voltage Protector Adjustment Singnal 2 27kHz
(Perform ONLY when DEF PWB is replaced.)
(Use adjustment jig.)

7.1 Receive the all black pattern.
7.2 Turn BRIGHTNESS CONTROL and CONRAST CONTROL fully left (MIN).
7.3 Adjust VR2001 (PROTECTOR) so that the voltage between TP2006 and TP2007 is 0±0.05 V.
(Adjust VR2001 (PROTECTOR) so that the voltage between jig TP52 (TP2006) and jig TP53 (TP2007) is 0±0.05V.)

After adjusting VR2001, seal with a silicon glue and cap.

8. Raster Horizontal Centering Adjustment Signal 12

8.1 Receive the all black pattern.
8.2 Adjust SCREEN CONTROL and BRIGHTNESS CONTROL so that the back-rasters are faintly bright.
8.3 Replace CN-CT so that the back-rasters are the center on the CRT screen.

CT-1	Do not move
CT-2	Move approx. 4mm
CT-3	Move approx. 8mm
CT-3	Move approx. 12mm

Note: 1. By changing the direction in which the connector is connected, moving direction change right and left.
2. Precise adjustment can be made by increasing the raster size fully to the bezel or CRT display area.
(Raster size < CRT display areas)

9. Horizontal Width Adjusment Signal 15

9.1 Receive signal 15 (78.8kHz).

9.2 Adjust V SIZE SW (user control) so that the vertical height is approx. 278mm.

Note: When the vertical height can not be adjusted to 278mm, first adjust VR421 (V HEIGHT) and then VR5S2 (SIDE PIN) to achieve 278mm of vertical height.

9.3 Adjust H SIZE SW (user control) to maximize the horizontal width.

9.4 Adjust VR590 (H SIZE) so that the horizontal screen size is bezel full (402±3mm).

10. Side Pincushion Adjustment Signal 5, 8, 11, 12, 13, 15

(Use adjustment jig.)

Note: The user control level should be 1.
(The mode status LED is off.)

10.1 Short TP-ADJ pin 1 and 4 (5V) and push MEMORY RECALL SW for more than 2 seconds.
(Jig SW53 (TP-ADJ ①−④) SHORT and push MEMORY RECALL SW for more than 2 seconds.)

10.2 Remove the short between TP-ADJ pin 1 and 4 and receive the all white pattern of signal 12.
(Jig SW53 (TP-ADJ ①−④) OPEN and push MEMORY RECALL SW for more than 2 seconds.)

10.3 Adjust V SIZE SW (user control) and VR421 (V HEIGHT) so that the vertical screen size is approx. 278mm, and adjust H SIZE SW (user control) so that the horizontal screen size is approx. 370mm.

10.4 Adjust VR5S2 (SIDE PIN1) so that the side pincushion distortion is within 1.5mm.

Note: when the right and left balance of side pincushion distortion is not good, adjust VR5U1 (SIDE PIN3) so that the balance is equal.
(To do alternately the side pincushion adjustment.)

10.5 Receive signal 5, 8, 11, 13 and 15 and adjust so that the screen size is approx. preset size, make sure that the side pincushion distortion of each signal are within ($-1.5\text{mm} \leqq X$).

10.6 In step 8.5, make the following adjustment for the signals whose side pincushion distortion is not set to within 1.5mm.

10.7 Short TP-ADJ pin 3 and 4 (5V).
(Jig SW51 (TP-ADJ ③−④) SHORT.)

10.8 Push H POSI RIGHT SW while holding the DEGAUSS SWITCH to adjust the user control level 2. (The mode status LED lights.)

10.9 Adjust SIDE PINCUSHION UP/DOWN SW (user control) so that the side pincushion distortion of each signal is within 1.5mm, and push MEMORY RECALL SW for more than 2 seconds.

10.10 Remove the short between TP-ADJ pin 3 and 4 (5V).
(Jig SW51 (TP-ADJ ③—④) OPEN.)

10.11 Push V POSI UP SW while holding the DEGAUSS SWITCH to put the user control level back to 1.

11. Screen Distortion Adjustment Signal 12

11.1 Adjust VR5W1 (PARALELL) to the mechanical center.

11.2 Receive the cross hatch pattern.

11.3 Adjust VR5W1 (PARALELL) so that the vertical line and horizontal line of screen center are crossed at $90 \pm 0.5^\circ$

Note: Items 11, 12, 13, 14 are influence each other, check the repeat.

12. Vertical Bias Adjustment Signal 13

12.1 Receive the all white pattern.

12.2 Adjust V POSI SW (user control) so that the screen is center.

12.3 Adjust V SIZE SW (user control) so that the screen width is 280mm±5mm.

12.4 Adjust VR411 (V BIAS) so that VDY3 is 15±0.2VDC.

Note: The voltmeter should be use a RMS type.

13. Vertical Linerarity Adjustment Signal 8, 9, 13
(Perform this procedure ONLY if necessary.)

13.1 Receive the cross hatch pattern of signal 13.

13.2 Make sure that VR431 (V LIN C) is mechanical center.

13.3 Adjust VR441 (V LIN S) so that the screen linearity of upper and center are same.

13.4 Adjust VR431 (V LIN C) so that the screen linearity of lower and center are same.

13.5 The screen of upper, center and lower are same, repeat the step 13.3 and 13.4.

13.6 Receive the cross hatch pattern of signal 8 and 9 and make sure that the linearity is within±6%

14.. Vertical Height Adjustment Signal 4

14.1 Receive the all white pattern.

14.2 Adjust V SIZE SW (user control) to maximize the V SIZE.

14.3 Adjust VR421 (V HEIGHT) so that the screen height is bezel full (301±3mm).

15. Preset Adjustment (H SIZE, H POSITION, V SIZE and V POSITION)
(Use adjustment jig.)

Note: The user control level should be 1.
(The mode status LED is off.)

15.1 Short TP-ADJ pin 1, 2, 3 and 4 (5V), push MEMORY RECALL SW for more than 2 seconds.
(Jig SW51 (TP-ADJ ③—④), SW52 (TP-ADJ ②—④) and SW53 (TP-ADJ ①—④) SHORT.)

Note: This resets the self-correction flag.

15.2 Remove the short of TP-ADJ pin 1.
(Jig SW53 (TP-ADJ ①—④) OPEN.)

15.3 Perform the following adjustments for each of the signals in list 1.

a) Adjust H SIZE SW (user control) and V SIZE SW (user control) so that the received screen is the value of list 1.
b) In the preset screen size of received screen, adjust H POSITION SW (user control) and V POSITION SW (user control) so that the distance difference of right and left bezel disply screen is within 1mm.
c) Push MEMORY RECALL SW for more than 2 seconds.

15.4 Upon completion of step 15.3, remove the TP-ADJ pins 2, 3 and 4 (5V) short.
(Upon completion of step 15.3, open SW51 (TP-ADJ ③—④), and SW52 (TP-ADJ ②—④).)

List 1　Microcomputer Preset Signals and Sizes

SIGNAL	CONTENTS	H SIZE	V SIZE
4	VGA350 (Separate Sync 31.5kHz 70Hz H: Positive V: Negative)	370±2mm	278±2mm
5	VGA400 (Separate Sync 31.5kHz 70Hz H: Positive V: Negative)	370±2mm	278±2mm
6	VGA480 (Separate Sync 31.5kHz 60Hz H: Positive V: Negative)	370±2mm	278±2mm
7	MAC-Ⅱ 35kHz 66.7Hz (Sync on Green)	370±2mm	278±2mm
8	8514A 35.5kHz 87Hz (Separate Sync Interlaced)	370±2mm	278±2mm
9	800*600 35kHz 56Hz (Separate Sync)	370±2mm	278±2mm
10	800*600 48kHz 72Hz (Separate Sync)	370±2mm	278±2mm
11	1024*768 MVA1024 48.5kHz 60Hz (Separate Sync)	370±2mm	278±2mm
12	1024*768 56.5kHz 70Hz (Separate Sync)	370±2mm	278±2mm
13	1280*1024 64.3kHz 60Hz (Sync on Green)	350±2mm	280±2mm
15	1280*1024 78.8kHz 74Hz (Sync on Green)	350±2mm	280±2mm

16. Video Amplitude Adjustment

(Use adjustment jig.)

Note: Make sure the user level is set to level 1.
Video signal: Analog $0.7V_{P-P} \pm 0.01V$ (75Ω ± 1 % termination)

16.1 Setting of the adjustment controls

VR701~VR703	GAIN VR	Fully left (MIN)
VR860	SUB GAIN VR	Fully left (MIN)
VR720~VR722	BIAS VR	Fully left (MIN)
VR723~VR725	BUB BRIGHT VR	Fully left (MIN)
SCREEN CONTROL		Fully left (MIN)
VR901 (CRT PWB)	SUB BIAS VR	Fully left (MIN)

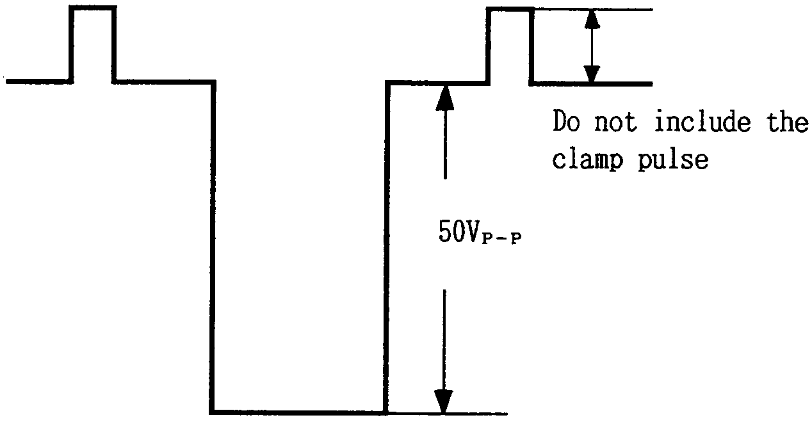
16.2 SUB GAIN Adjustment Signal 16 (78.8kHz window pattern)

Note: Make sure that the user level should be 1.

a) Set COLOR MODE SW to position 1.
b) Turn CONTRAST CONTROL fully right (MAX) and turn BRIGHTNESS CONTROL fully left (MIN).
c) Short TP-ADJ pin 2 and 4 (+ 5V) on the CPU PWB.
(Jig SW52 (TP-ADJ ②—④) SHORT.)
d) Push MEMORY RECALL SW for more than 2 seconds.
e) Remove the short between TP-ADJ pin 2 and 4.
(Jig SW52 (TP-ADJ ②—④) OPEN.)
f) Adjust VR860 so that TP862 is 2.7 ± 0.03V.

16.3 GAIN Adjustment Signal 16 (78.8kHz window pattern)

a) Receive the window pattern.
b) Adjust VR701 (G GAIN), VR702 (R GAIN) and VR703 (B GAIN) so that TP701 (TP-G), TP-702 (TP-R) and TP703 (TP-B) on the VIDEO PWB are set to $50V_{P-P}$.
c) When $50V_{P-P}$ can not be attained in any case, adjust VR860 right so that the smallest amplitude channel is $50V_{P-P}$. Then readjust from step c).
d) After adjusting, check the V_{P-P} value of TP701, TP702 and TP703. Make readjustment if not as set.



(Fig. 4) Waveform of TP R, G and B

17. Cut Off Adjustment Signal 16 (78.8kHz window pattern)
(Use adjustment jig.)

17.1 Initial Setting of Controls

VR720～VR722	BIAS VR	Fully left (MIN)
VR723～VR725	SUB BRIGHT VR	Fully left (MIN)
SCREEN CONTROL		Fully left (MIN)
VR901 (CRT PWB)	SUB BIAS VR	Fully left (MIN)
CONTRAST CONTROL		Fully left (MIN)
BRIGHTNESS CONTROL		Fully left (MIN)

17.2 Receive the all black pattern of signal 16.

17.3 a) Short in this order:
Test jig TP863, TP864, TP865 and TP866.
b) Set SW401 to the right side (SHORT).

Note: Short a) before b).

17.4 Adjust SCREEN CONTROL so that the high voltage meter of TP901 on the CRT PWB is 650VDC.

Note: Using a high voltage meter whose max voltage is more than 1.5kV and input resistance is more than 1000MΩ.

17.5 Turn VR901 (SUB BIAS VR) right slowly until a single color appears horizontally on the CRT PWB. Adjust the VR901 (SUB BIAS VR) so that the color can faintly be seen. This color is the reference color for the cut off adjustment. When the reference color is not bright enough, go to the step 17.6.

17.6 Turn BIAS VRs (on the VIDEO PWB) right except the above reference color and they are as bright as the reference color.
When the reference color is not bright enough with VR901 turned fully right, adjust the three BIAS VRs right so that the three colors are equally bright.

17.7 Set SW401 to the left (OPEN).

Note: Hold the short among TP-863, 4, 5, and 6.

Important: This cut off adjustment is easier to perform in a dark room.
For best results perform cut off in as dark a room as possible.

18. Cut Off Fine Adjustment (Contrast Tracking)

Signal 16 (78.8kHz window pattern)

18.1 Receive signal 16 (78.8 kHz window pattern).

18.2 Hold the short TP863, 4, 5 and 6.
(Jig TP863~TP866 (HOLDER) hold.)

18.3 Turn CONTAST CONTROL fully right (MAX) and measure the color temperature.

(X1, Y1)

18.4 Adjust CONTRAST CONTROL so that the brightness is approx. 7cd/m^2 and measure the color temperature.

(X2, Y2)

18.5 Fine adjust the BIAS VRs, other than the cut off reference color, so that (X1,Y1)=(X2,Y2).

18.6 Turn CONTRAST CONTROL fully right (MAX) once again and measure the color temperature.
If a deviation is found, make the fine adjustment of step 18.5 above once again as below.

$$\Delta X = X1 - X2 \leqq \pm 0.005$$
$$\Delta Y = Y1 - Y2 \leqq \pm 0.005$$

18.7 Remove the short among TP863, TP864, TP865 and TP866.

19. Sub Bright Adjustment Signal 16 (78.8kHz window pattern)

19.1 Receive the all black pattern.
19.2 Turn BRIGHTNESS CONTROL fully right (MAX).
19.3 Adjust G SUB BRIGHT to 5cd/m^2.
19.4 Adjust R/B SUB BRIGHT VR as below.

$$X = X1 \pm 0.005$$
$$Y = Y1 \pm 0.005$$

Note: X1 and Y1 are the values measured in step 19.3.

20. Color Mode Color Adjustment Signal 15 (78.8kHz)

20.1 Initial Setting of Adjustment Controls

CONTRAST CONTROL	Fully right (MAX)
BRIGHTNESS CONTROL	Fully left (MIN)
COLOR SW	N (Left side)

20.2 Receive the all white pattern.
20.3 Short among TP863, TP864, TP865 and TP866.
20.4 Push H POSI RIGHT SW while holding DEGAUSS SWITCH to change the user control level to 2 and make sure that the LED lights.
20.5 Short TP-ADJ pin 2 and 4 (+5V) on the CPU PWB.
(Jig SW52 (TP-ADJ ②–④) SHORT.)

20.6 Adjust the color temperature as below by using the user control and MEMORY RECALL SW more than 2 seconds.

$X=0.281\pm0.005$
$Y=0.311\pm0.005$

20.7 Remove the short among TP863, TP864, TP865 and TP866.
20.8 Receive the all black pattern of signal 15.
20.9 Turn BRIGHTNESS fully right (MAX).
20.10 Push V POSI DOWN SW while holding DEGAUSS SWITCH to change the user control level to 3 and make sure that the LED turn and off.
20.11 Adjust the color temperature as below by using the user control and RECALL SW more than 2 seconds.

$X=0.281\pm0.005$
$Y=0.311\pm0.005$

But when the brightness is in excess of 9 cd/m^2, turn VR723, 724 and 725 (G, R and B SUB BRIGHT) left slowly and adjust the color temperature as above at the brightness of 5~9 cd/m^2.

20.12 Remove the short TP-ADJ pin 2 and 4 (+5V).
(Jig SW52 (TP-ADJ ②−④) OPEN.)
20.13 Push V POSI UP SW while holding DEGAUSS SWITCH to set the user control level to 1.

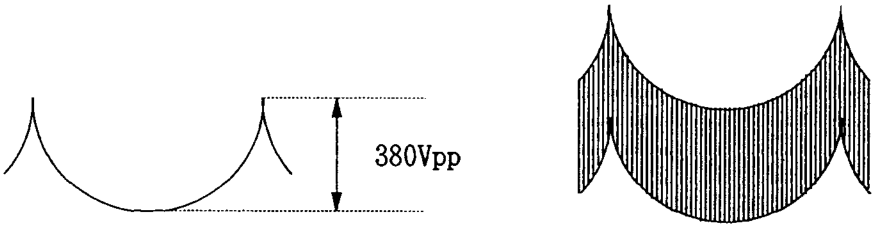
21. Focus Adjustment Signal 15 (78.8kHz)

21.1 Receive signal 15 and adjust the horizontal/vertical screen size fully to bezel.

21.2 Adjust the voltage of TP951 to the values given blow by using VR951 (H FOCUS) and VR952 (V FOCUS).

a) Horizontal Sync	$380V_{P-P}$
b) Vertical Sync	$120V_{P-P}$

Note: When measuring V_{P-P}, use a probe whose attenuation is 100 : 1 and its capacitance is approx. 2pF.



Horizontal Focus

Vertical Focus

(Fig. 5) Parabolic Waveform

21.3 Focus Adjustment Procedure

a) Adjust BRIGHTNESS CONTROL so that the back-raster just disappears and turn CONTRAST CONTROL fully right.
b) Receive the cross hatch pattern (Horizontal lines: 17, vertical lines: 13) of the green single color.
c) Adjust the focus so that the vertical lines are fine by using FOCUS CONTROL H on the FBT.
   At that time, the vertical lines do not become halo.
d) Adjust the focus so that the horizontal lines are fine in the center and corner by using FOCUS CONTROL V on the FBT.
   At that time, the horizontal lines do not become halo.
e) Repeat steps c) and d) and adjust the uniform focus on the whole screen.
f) Receive the white "&" character pattern.
g) Make sure that the white "&" character hole is missing on the whole screen.

h) When the uniform focus is not attained in step g), turn FOCUS CONTROL V slightly so that the bad point of focus is correct. At the same time, readjust it so that the whole screen is uniform.

i) When the uniform focus is not attained in step h), turn FOCUS CONTROL H V slightly so that the bad point of focus is correct. At the same time, readjust it so that the whole screen is uniform.

Note: when FOCUS CONTROL H is turned, the focus of horizontal line (V) has to be readjusted. The adjustment of step h) should be made only when it is not possible to attain the focus though adjustment in step g).

j) When adjustment of h) and i) are made, receive the cross hatch signal make sure that the extreme halo does not exist in each single color of R, G and b.

Incidentally, when the focus is uniform over the whole screen, each parabolic wave should be corrected to ±40V at the horizontal focus and to ±20V at the vertical focus.

22. Purity Adjustment

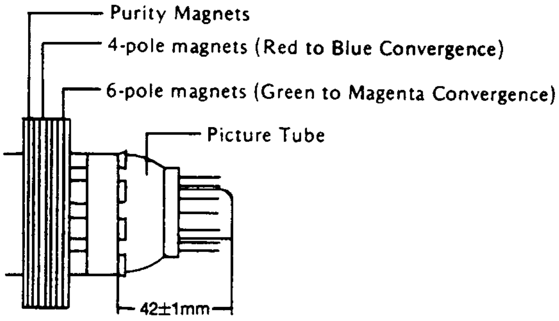
22.1 Manually degauss the monitor to remove any stray magnetic fields before performing this procedure.

22.2 Be sure that the display is not being exposed to any external magnetic fields.

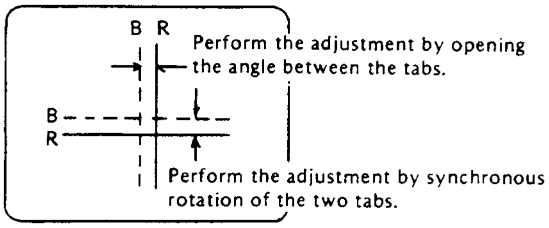
22.3 Ensure that the spacing between the Purity Convergence Magnet (PCM) assembly and the CRT stem is 40.5mm±1mm.(See diagram below)

22.4 Produce a complete, red pattern on the display. Adjust the Purity magnet rings on the PCM assembly to obtain a complete field of the color red. This is done by moving the two tabs in such a manner that they advance in an opposite direction but at the same time to obtain the same angle between the two tabs, which should be approximately 180°.

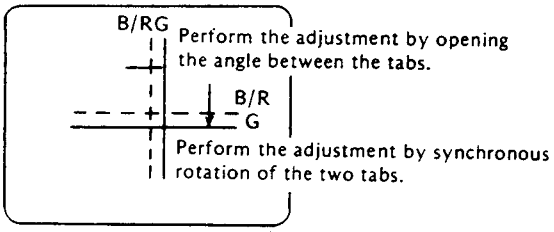
22.5 Check the complete blue and complete green patterns to observe their respective color purity. Make minor adjustments if needed.


Purity Magnets
4-pole magnets (Red to Blue Convergence)
6-pole magnets (Green to Magenta Convergence)
Picture Tube
42±1mm

Purity, Convergence Magnet Assembly (PCM)


B R
Perform the adjustment by opening the angle between the tabs.
B
R
Perform the adjustment by synchronous rotation of the two tabs.

Red to Blue Convergence (Magenta)


B/RG
Perform the adjustment by opening the angle between the tabs.
B/R
G
Perform the adjustment by synchronous rotation of the two tabs.

Green to Magenta Convergence (White)

23. Convergence Adjustment

23.1 Produce a magenta crosshatch on the display.

23.2 Adjust the focus for the best overall focus on the display.
Also adjust the brightness to the desired condition.

23.3 Vertical red and blue lines are converged by varying the angle between the two tabs of the 4-pole magnets on the PCM assembly.(See diagrams above)

23.4 Horizontal red and blue lines are converged by varying the two tabs together, keeping the angle between them constant.

23.5 Produce a white crosshatch pattern on the display.

23.6 Vertical green and magenta lines are converged by varying the angle between the two tabs of the 6-pole magnets.

23.7 Horizontal green and magenta lines are converged by varying the two tabs together, keeping the angle between them constant.

24. Adjustment Signal Timing

SIGNAL	CONTENTS
1	44kHz 72Hz All White H Hold 2
2	27kHz 60Hz Separate Sync H Sync : N V Sync : P
3	79kHz 74Hz Sync on Green
4	VGA350 Separate Sync H Sync : P V Sync : N
5	VGA400 Separate Sync H Sync : N V Sync : P
6	VGA480 Separate Sync H Sync : N V Sync : N
7	MAC-Ⅱ Sync on Green
8	8514A Separate Sync Interlace H Sync : P V Sync : P
9	800＊600／56.2Hz Separate Sync H Sync : P V Sync : P
10	800＊600／72Hz Separate Sync H Sync : P V Sync : P
11	1024＊768／60Hz Separate Sync H Sync : N V Sync : N
12	1024＊768／70Hz Separate Sync H Sync : N V Sync : N
13	1280＊1024／60Hz Sync on Green H Hold 1
14	1280＊1024／70Hz Sync on Green
15	1280＊1024／74Hz Sync on Green
16	1280＊1024／74Hz Sync on Green Window pattern

TIMING OF REFERENCES SIGNALS

SIGNALS FOR USING LVG-1603

Abbreviation		Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
			44kHz 72Hz	27kHz 60Hz	79kHz 74Hz	VGA350	VGA400	VGA480	MAC-E	8514A	800X 600 56Hz	800X 600 72Hz	1024X 768 60Hz	1024X 768 70Hz	1280X 1024 60Hz	1280X 1024 70Hz	1280X 1024 74Hz	1280X 1024 74Hz WINDOW
HORIZONTAL	Total	DOT	1040	0900	0759	0900	0900	0900	0864	1264	1024	1040	1024	1062	0932	0800	0760	0760
	Rate	kHz	044000	027000	079000	031470	031470	031470	035000	035520	035160	048090	048360	056480	064310	074910	078860	078860
	Dots/Character	DOT	08	08	09	09	09	09	08	08	08	08	09	09	08	09	08	08
	Characters	CHR	F100	F090	F063	F080	F080	F080	F080	F128	F100	F100	F105	F091	F090	F067	F071	F018
	Drive Delay	DOT	0856	0738	0582	0738	0738	0738	0704	1032	0824	0856	0967	0838	0739	0619	0582	0371
	Drive Width	DOT	0120	0108	0064	0108	0108	0108	0064	0176	0072	0120	0125	0109	0058	0075	0064	0064
VERTICAL	Total	RASTER	0609	0449	1064	0449	0449	0524	0525	0409	0625	0666	0806	0806	1065	1072	1064	1064
	Rate	Hz	072250	060134	074248	070000	070000	060000	066700	087000	056200	072207	060000	070074	060385	069879	074117	074117
	Lines/Character	RASTER	10	10	10	14	16	16	16	12	15	10	10	10	10	10	10	10
	Rows	RASTER	0549	0400	1024	0350	0400	0480	0480	0384	0600	0600	0768	0768	1024	1024	1024	0326
	Drive Delay	RASTER	0583	0412	1024	0387	0412	0489	0483	0384	0601	0637	0771	0771	1030	1026	1024	0675
	Drive Width	RASTER	0005	0002	0003	0002	0002	0002	0003	0004	0002	0006	0006	0006	0003	0004	0003	0003
DOT RATE		MHz	045760	024300	059961	028323	028323	028323	030240	044897	036004	050014	059966	059982	059937	059928	059934	059934
Scan Mode			F0	F0	F0	F0	F0	F0	F0	F1	F0	F0	F0	F0	F0	F0	F0	F0
Character Font			F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1
Character Code			48	48	48	—	—	—	—	—	—	48	48	48	48	48	48	48
Pattern Key Code			F2	F2	F2	F	F	F	F	F	F	F2	F2	F2	F2	F2	F2	F2
Video Output			1110	1110	1110	1110	1110	1110	1110	1110	1110	1110	1110	1110	1110	1110	1110	1110
Add Sync/Inverse			0000	0000	0100	0001	0001	0001	0101	0001	0001	0000	0000	0000	0100	0100	0100	0100
Dot Duty			00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
Polarity			00	01	00	10	01	00	00	11	11	11	00	00	00	00	00	00

SIGNALS FOR USING QUANTUM 801C

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
		44kHz 72Hz	27kHz 60Hz	79kHz 74Hz	VGA350	VGA400	VGA480	MAC-Ⅱ	8514A	800X 600 56Hz	800X 600 72Hz	1024X 768 60Hz	1024X 768 70Hz	1280X 1024 60Hz	1280X 1024 70Hz	1280X 1024 74Hz	1280X 1024 74Hz WINDOW
Real Time Parameters																	
Dot Rate (MHz)		31.680	24.300		28.320	28.320	28.320	30.240	31.968	31.960	31.932	31.773	31.629	31.898			
Horizontal Rate (kHz)		44.000	27.000		31.467	31.467	31.467	35.000	35.520	35.160	48.090	48.360	56.480	64.310			
Vertical Rate (Hz)		72.250	60.134		70.08	70.08	60.06	66.67	86.96	56.26	72.207	60.000	70.074	60.358			
Non-Real Time Parameters																	
H: Dots/Character		8	9		9	9	9	8	9	9	8	9	8	8			
Total Characters		90	100		100	100	100	108	100	101	83	73	70	62			
Displayed Characters		70	80		80	80	80	80	81	79	64	56	55	48			
Drive Delay		75	82		82	82	82	88	82	81	68	57	56	49			
Drive Width		11	12		12	12	12	8	14	7	10	7	7	4			
V: Lines/Character		10	10		10	10	10	10	12	10	12	12	12	10			
Total Lines		609	449		449	449	524	525	817	625	666	806	806	1065			
Displayed Rows		55	40		35	40	48	48	64	60	50	64	64	102			
Drive Delay (Rows)		58	41		39	41	49	48	64	60	53	64	64	103			
Drive Width (Lines)		5	2		2	2	2	3	4	2	6	6	6	3			
Step Width		2	2		2	2	2	2	2	2	2	2	2	2			
Signal Gating																	
Composite Sync	OP 1	1	1		0	0	0	0	0	0	1	1	1	1			
Vertical Step	OP 2	0	0		0	0	0	0	0	0	0	0	0	0			
Horizontal Drive	OP 3	1	1		1	1	1	1	1	1	1	1	1	1			
Vertical Drive	OP 4	1	1		1	1	1	1	1	1	1	1	1	1			
Signal Polarity																	
Composite Sync	OP 5	1	1		—	—	—	—	—	—	0	1	1	1			
Vertical Step	OP 6	1	1		0	0	0	0	0	0	1	1	1	1			
Horizontal Drive	OP 7	1	1		0	1	1	1	0	0	0	1	1	1			
Vertical Drive	OP 8	1	0		1	0	1	1	0	0	0	1	1	1			
Video	OP 13	0	0		0	0	0	0	0	0	0	0	0	0			
Interlace Mode	OP 9	0	0		0	0	0	0	3	0	0	0	0	0			
Video Mode	OP 10	1	1		1	1	1	1	1	1	1	1	1	1			
Duty Cycle	OP 11	0	0		0	0	0	0	0	0	0	0	0	0			
Character Clocking																	
Mode	OP 12	0	0		0	0	0	0	0	0	0	0	0	0			
Horizontal Skew	OP 14	0	0		—	—	—	—	—	—	0	0	0	0			
Vertical Skew	OP 15	0	0		—	—	—	—	—	—	0	0	0	0			
Cursor	OP 16	0	0		—	—	—	—	—	—	0	0	0	0			

Note: Quantum 801C ($f_H \leqq 65$kHz) can not use for the item 3, 14, 15 and 16 of this timing chart.

TROUBLE SHOOTING

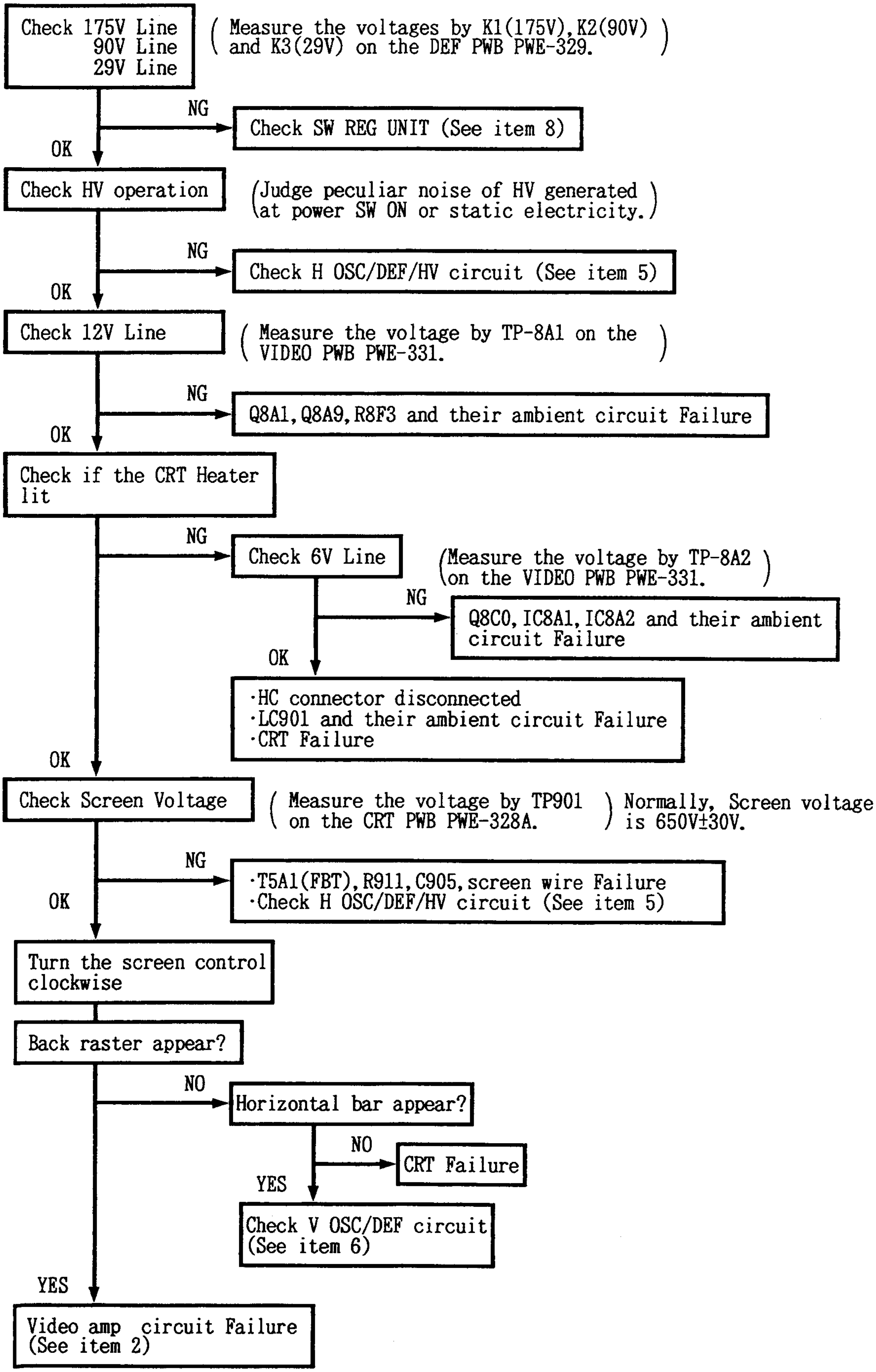
Before using this chart,refer to the trouble shooting section the user's manual.

TABLE OF CONTENTS

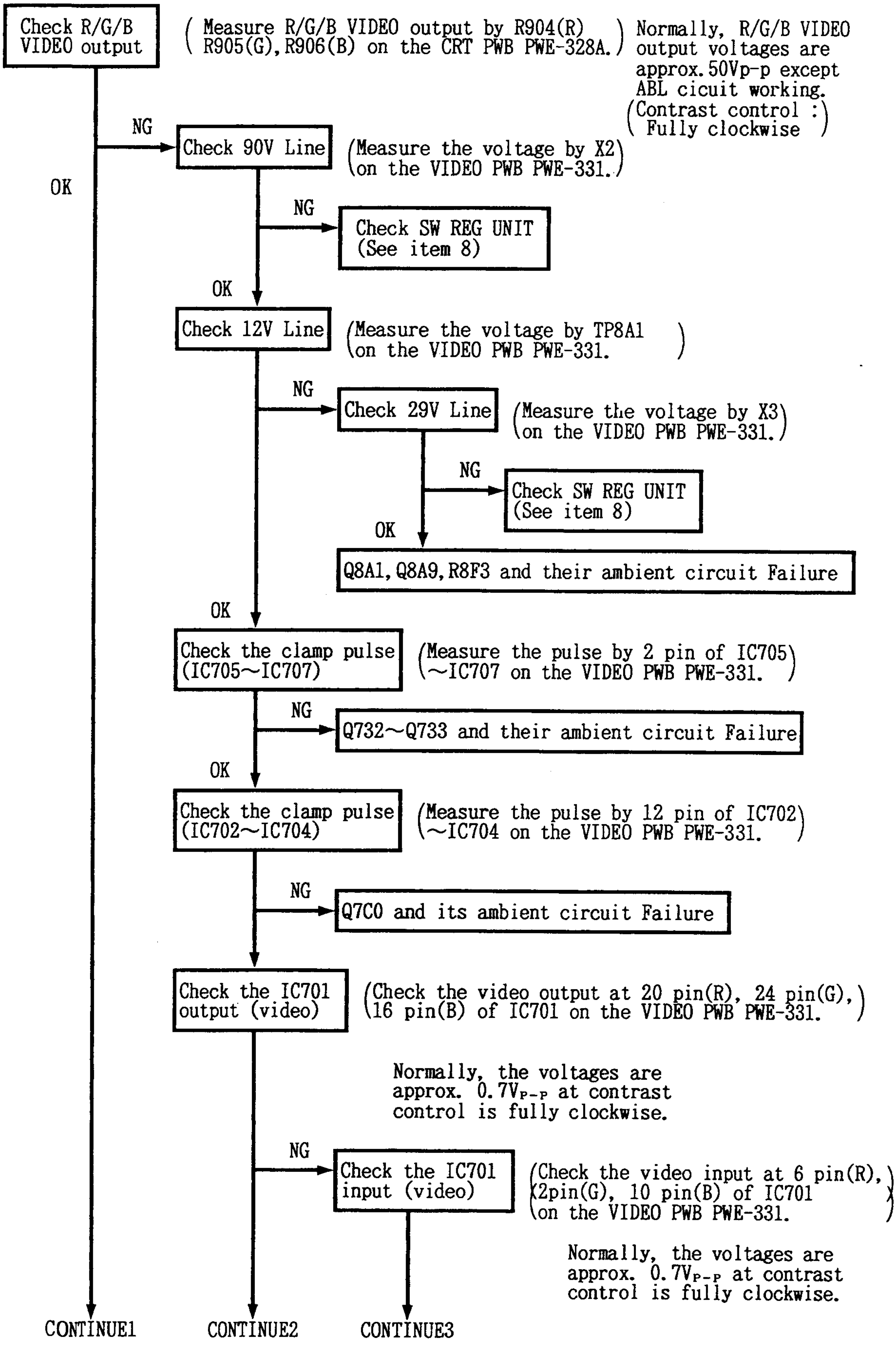
PAGE

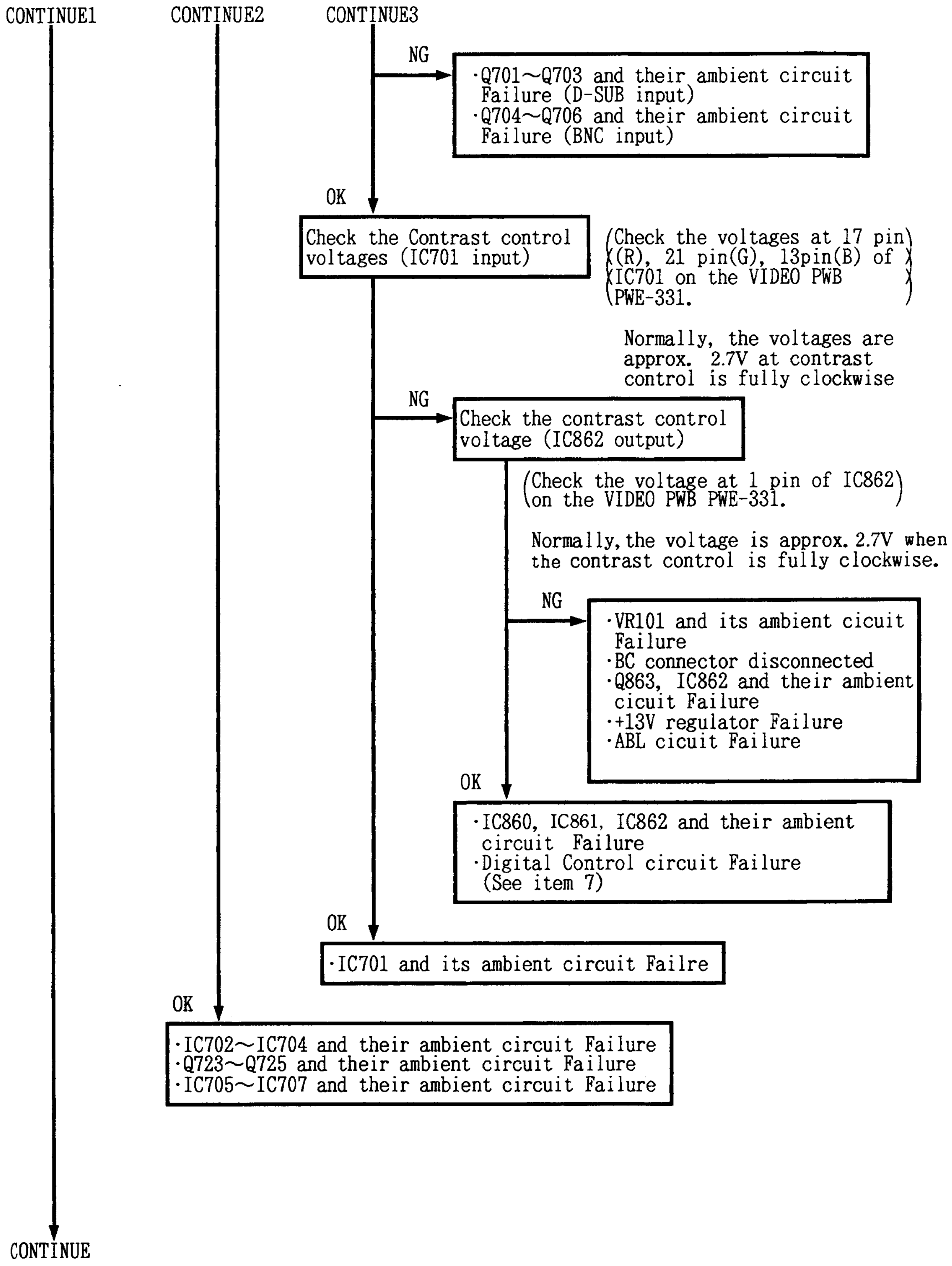
1. NO RASTER 57
2. ABNORMAL VIDEO ON CRT SCREEN 58
3. UNSTABLE PICTURE 62
  3.1 HORIZONTAL 62
  3.2 VERTICAL 63
4. ABNORMAL PICTURE 64
  4.1 HORIZONTAL SIZE 64
  4.2 VERTICAL SIZE 67
  4.3 HORIZONTAL POSITION 68
  4.4 VERTICAL POSITION 69
  4.5 POOR LINEARITY 69
    4.5.1 HORIZONTAL 69
    4.5.2 VERTICAL 70
  4.6 DISTORTION CORRECTION CIRCUIT FAULT 71
    4.6.1 SIDE PINCUSHION DISTORTION FAULT 71
    4.6.2 PARALLELOGRAM DISTORTION CORRECTION CIRCUIT 72
  4.7 POOR FOCUS 72
  4.8 IMPURITY ON CRT SCREEN 74
5. H OSC/DEF/HV CIRCUIT FAULT 75
6. V OSC/DEF CURCUIT FAULT 79
7. DIGITAL CONTROL CIRCUIT FAULT 80
  7.1 DIGITAL CONTROL ERROR 80
  7.2 USER CONTROL ERROR 81
  7.3 MEMORY ACCESS ERROR 83
  7.4 SELF-TEST ERROR 84
8. SWITCHING REGULATOR UNIT 85
  8.1 THE SWITCHING REGULATOR UNIT FAILURE (JC-2141UMA/JC-2142UMA) 86
  8.2 THE SWITCHING REGULATOR UNIT FAILURE (JC-2141UMB/B(EE)/R) 87

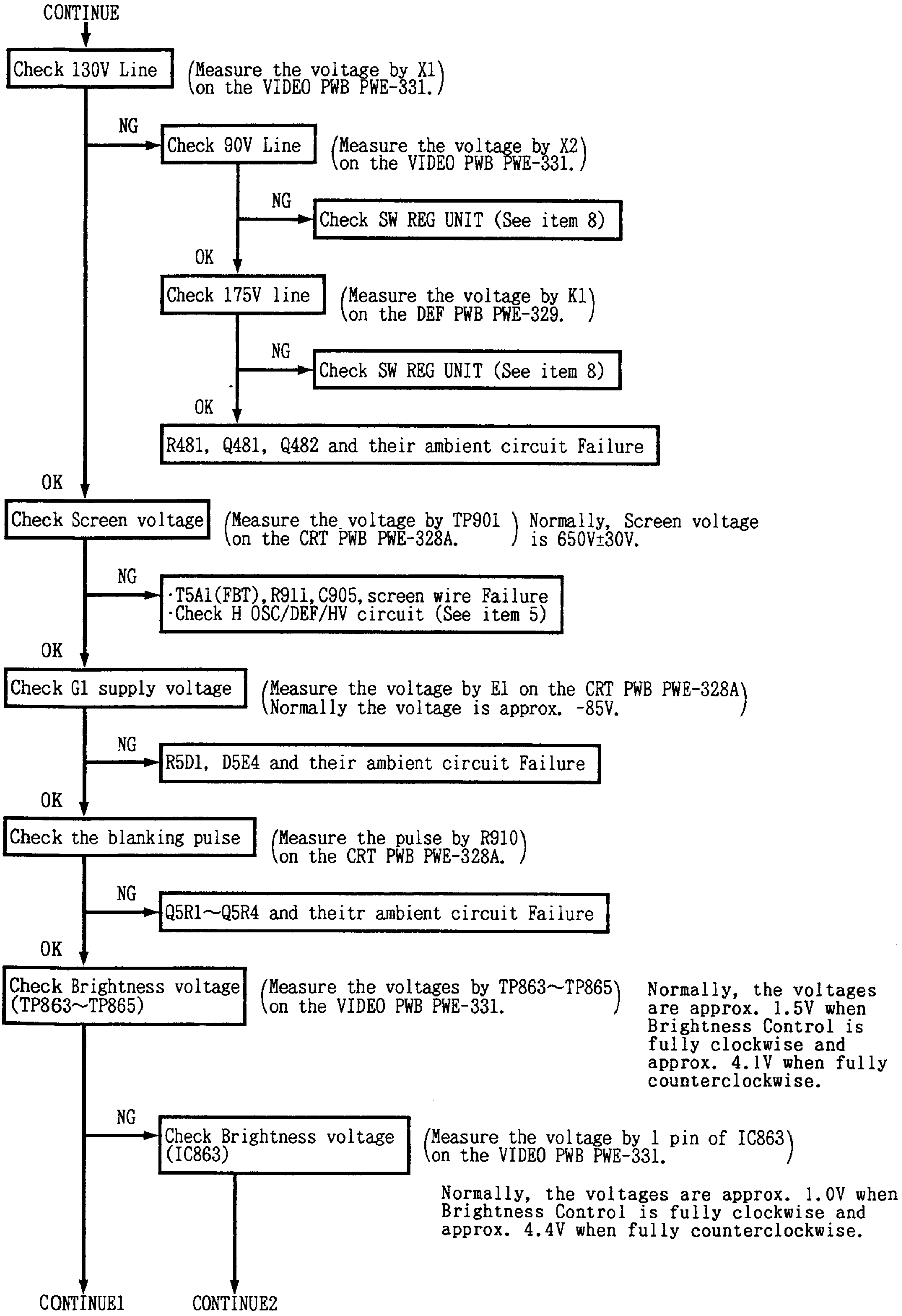
1. NO RASTER

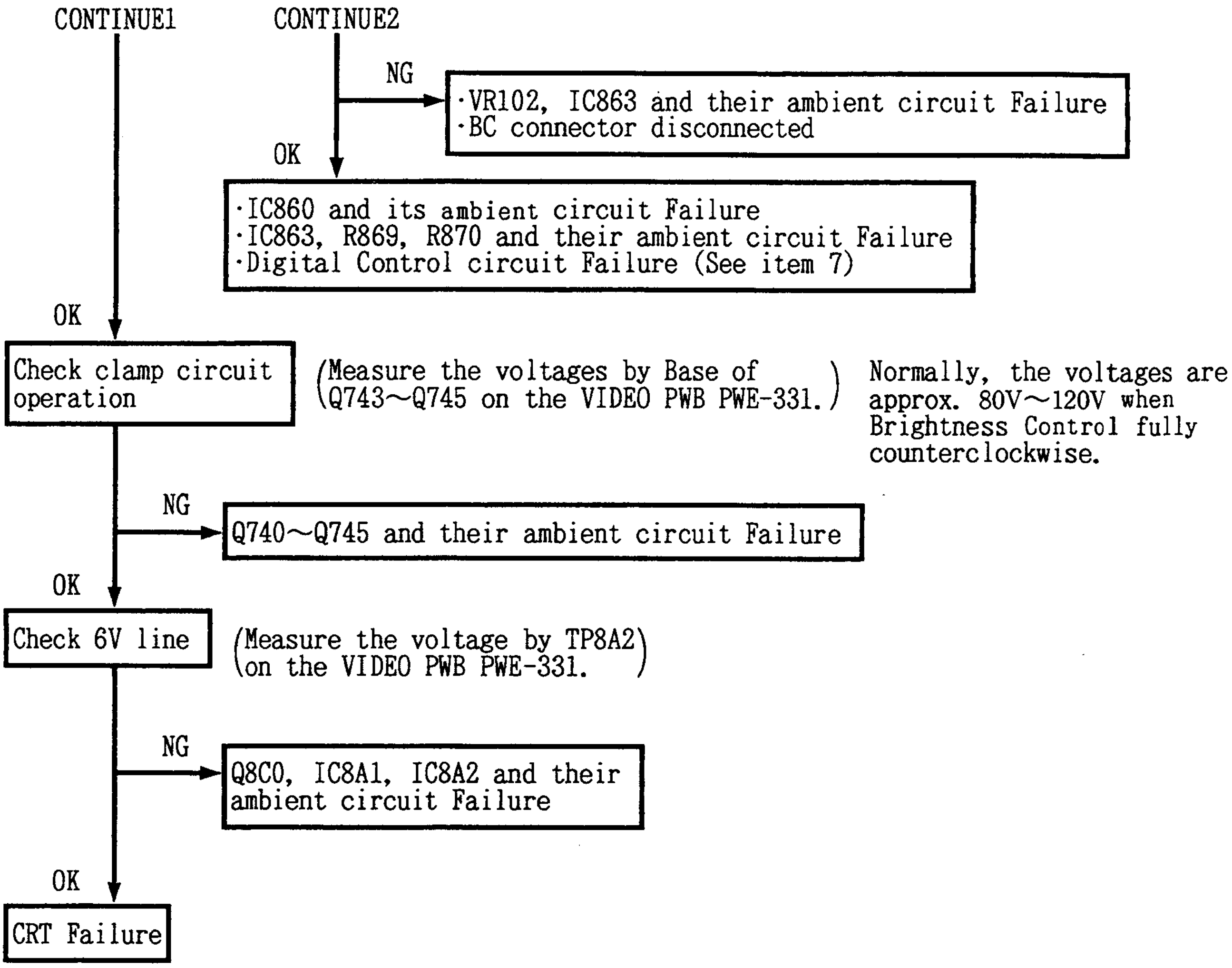

Check 175V Line
90V Line
29V Line
(Measure the voltages by K1(175V),K2(90V) and K3(29V) on the DEF PWB PWE-329.)
NG
Check SW REG UNIT (See item 8)
OK
Check HV operation
(Judge peculiar noise of HV generated at power SW ON or static electricity.)
NG
Check H OSC/DEF/HV circuit (See item 5)
OK
Check 12V Line
(Measure the voltage by TP-8A1 on the VIDEO PWB PWE-331.)
NG
Q8A1,Q8A9,R8F3 and their ambient circuit Failure
OK
Check if the CRT Heater lit
NG
Check 6V Line
(Measure the voltage by TP-8A2 on the VIDEO PWB PWE-331.)
NG
Q8C0,IC8A1,IC8A2 and their ambient circuit Failure
OK
·HC connector disconnected
·LC901 and their ambient circuit Failure
·CRT Failure
OK
Check Screen Voltage
(Measure the voltage by TP901 on the CRT PWB PWE-328A.) Normally, Screen voltage is 650V±30V.
NG
·T5A1(FBT),R911,C905,screen wire Failure
·Check H OSC/DEF/HV circuit (See item 5)
OK
Turn the screen control clockwise
Back raster appear?
NO
Horizontal bar appear?
NO
CRT Failure
YES
Check V OSC/DEF circuit (See item 6)
YES
Video amp circuit Failure (See item 2)

2. ABNORMAL VIDEO ON CRT SCREEN (Too dark or too bright)


Check R/G/B VIDEO output
(Measure R/G/B VIDEO output by R904(R) R905(G), R906(B) on the CRT PWB PWE-328A.)
Normally, R/G/B VIDEO output voltages are approx. 50Vp-p except ABL cicuit working.
(Contrast control : Fully clockwise)
NG
OK
Check 90V Line
(Measure the voltage by X2 on the VIDEO PWB PWE-331.)
NG
Check SW REG UNIT (See item 8)
OK
Check 12V Line
(Measure the voltage by TP8A1 on the VIDEO PWB PWE-331.)
NG
Check 29V Line
(Measure the voltage by X3 on the VIDEO PWB PWE-331.)
NG
Check SW REG UNIT (See item 8)
OK
Q8A1, Q8A9, R8F3 and their ambient circuit Failure
OK
Check the clamp pulse (IC705~IC707)
(Measure the pulse by 2 pin of IC705 ~IC707 on the VIDEO PWB PWE-331.)
NG
Q732~Q733 and their ambient circuit Failure
OK
Check the clamp pulse (IC702~IC704)
(Measure the pulse by 12 pin of IC702 ~IC704 on the VIDEO PWB PWE-331.)
NG
Q7C0 and its ambient circuit Failure
Check the IC701 output (video)
(Check the video output at 20 pin(R), 24 pin(G), 16 pin(B) of IC701 on the VIDEO PWB PWE-331.)
Normally, the voltages are approx. 0.7Vp-p at contrast control is fully clockwise.
NG
Check the IC701 input (video)
(Check the video input at 6 pin(R), 2pin(G), 10 pin(B) of IC701 on the VIDEO PWB PWE-331.)
Normally, the voltages are approx. 0.7Vp-p at contrast control is fully clockwise.
CONTINUE1
CONTINUE2
CONTINUE3

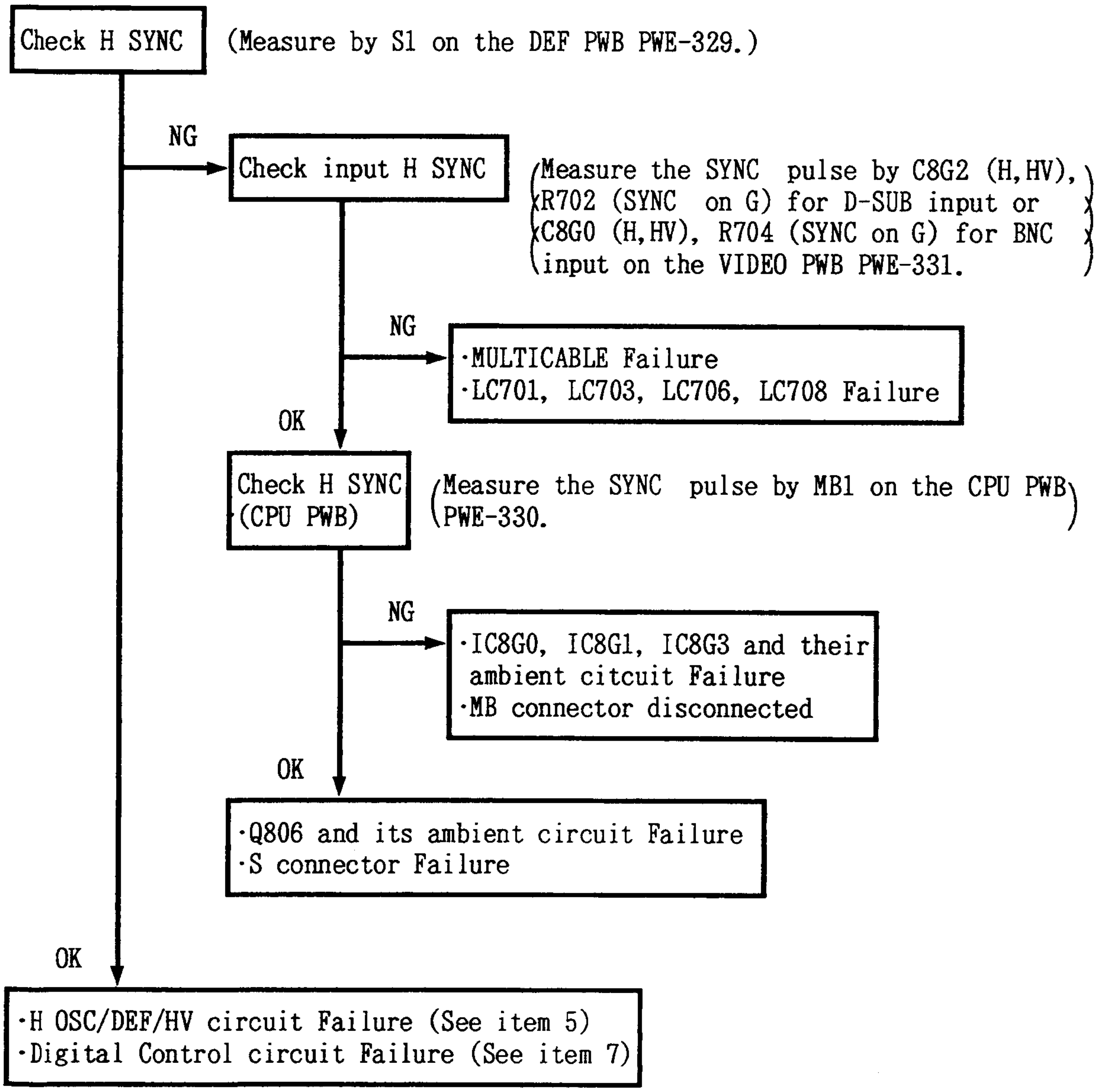

CONTINUE1
CONTINUE2
CONTINUE3
NG
·Q701～Q703 and their ambient circuit Failure (D-SUB input)
·Q704～Q706 and their ambient circuit Failure (BNC input)
OK
Check the Contrast control voltages (IC701 input)
(Check the voltages at 17 pin (R), 21 pin(G), 13pin(B) of IC701 on the VIDEO PWB PWE-331.)
Normally, the voltages are approx. 2.7V at contrast control is fully clockwise
NG
Check the contrast control voltage (IC862 output)
(Check the voltage at 1 pin of IC862 on the VIDEO PWB PWE-331.)
Normally, the voltage is approx. 2.7V when the contrast control is fully clockwise.
NG
·VR101 and its ambient cicuit Failure
·BC connector disconnected
·Q863, IC862 and their ambient cicuit Failure
·+13V regulator Failure
·ABL cicuit Failure
OK
·IC860, IC861, IC862 and their ambient circuit Failure
·Digital Control circuit Failure (See item 7)
OK
·IC701 and its ambient circuit Failre
OK
·IC702～IC704 and their ambient circuit Failure
·Q723～Q725 and their ambient circuit Failure
·IC705～IC707 and their ambient circuit Failure
CONTINUE


CONTINUE
Check 130V Line
(Measure the voltage by X1 on the VIDEO PWB PWE-331.)
NG
Check 90V Line
(Measure the voltage by X2 on the VIDEO PWB PWE-331.)
NG
Check SW REG UNIT (See item 8)
OK
Check 175V line
(Measure the voltage by K1 on the DEF PWB PWE-329.)
NG
Check SW REG UNIT (See item 8)
OK
R481, Q481, Q482 and their ambient circuit Failure
OK
Check Screen voltage
(Measure the voltage by TP901 on the CRT PWB PWE-328A.)
Normally, Screen voltage is 650V±30V.
NG
·T5A1(FBT),R911,C905,screen wire Failure
·Check H OSC/DEF/HV circuit (See item 5)
OK
Check G1 supply voltage
(Measure the voltage by E1 on the CRT PWB PWE-328A Normally the voltage is approx. -85V.)
NG
R5D1, D5E4 and their ambient circuit Failure
OK
Check the blanking pulse
(Measure the pulse by R910 on the CRT PWB PWE-328A.)
NG
Q5R1~Q5R4 and theitr ambient circuit Failure
OK
Check Brightness voltage (TP863~TP865)
(Measure the voltages by TP863~TP865 on the VIDEO PWB PWE-331.)
Normally, the voltages are approx. 1.5V when Brightness Control is fully clockwise and approx. 4.1V when fully counterclockwise.
NG
Check Brightness voltage (IC863)
(Measure the voltage by 1 pin of IC863 on the VIDEO PWB PWE-331.)
Normally, the voltages are approx. 1.0V when Brightness Control is fully clockwise and approx. 4.4V when fully counterclockwise.
CONTINUE1
CONTINUE2


CONTINUE1
CONTINUE2
NG
·VR102, IC863 and their ambient circuit Failure
·BC connector disconnected
OK
·IC860 and its ambient circuit Failure
·IC863, R869, R870 and their ambient circuit Failure
·Digital Control circuit Failure (See item 7)
OK
Check clamp circuit operation
(Measure the voltages by Base of Q743~Q745 on the VIDEO PWB PWE-331.)
Normally, the voltages are approx. 80V~120V when Brightness Control fully counterclockwise.
NG
Q740~Q745 and their ambient circuit Failure
OK
Check 6V line
(Measure the voltage by TP8A2 on the VIDEO PWB PWE-331.)
NG
Q8C0, IC8A1, IC8A2 and their ambient circuit Failure
OK
CRT Failure

3. UNSTABLE PICTURE

3.1 HORIZONTAL

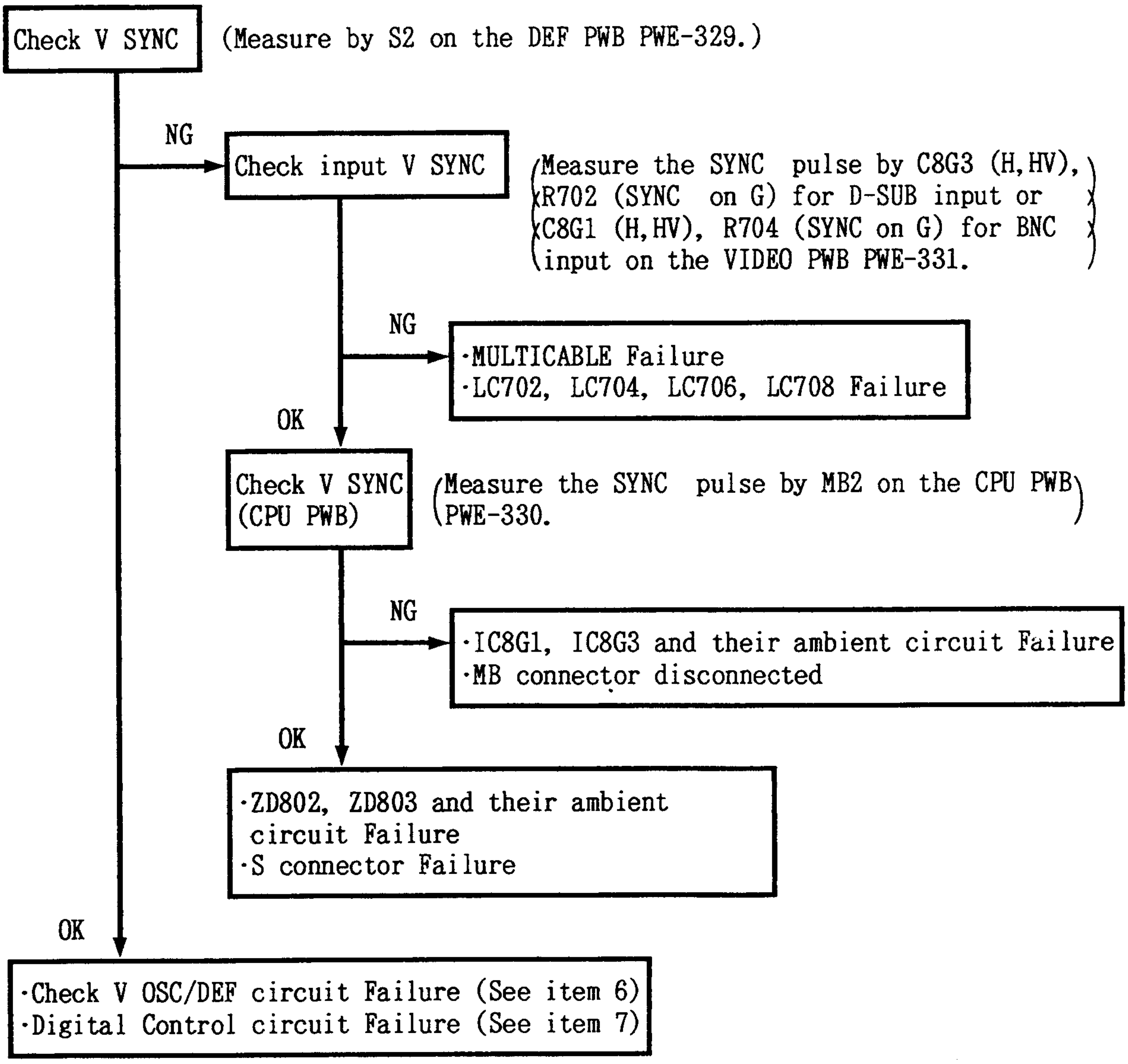

Check H SYNC
NG
Check input H SYNC
NG
·MULTICABLE Failure
·LC701, LC703, LC706, LC708 Failure
OK
Check H SYNC (CPU PWB)
NG
·IC8G0, IC8G1, IC8G3 and their ambient citcuit Failure
·MB connector disconnected
OK
·Q806 and its ambient circuit Failure
·S connector Failure
OK
·H OSC/DEF/HV circuit Failure (See item 5)
·Digital Control circuit Failure (See item 7)

(Measure by S1 on the DEF PWB PWE-329.)

(Measure the SYNC pulse by C8G2 (H,HV), R702 (SYNC on G) for D-SUB input or C8G0 (H,HV), R704 (SYNC on G) for BNC input on the VIDEO PWB PWE-331.)

(Measure the SYNC pulse by MB1 on the CPU PWB PWE-330.)

3.2 VERTICAL


Check V SYNC
NG
Check input V SYNC
NG
·MULTICABLE Failure
·LC702, LC704, LC706, LC708 Failure
OK
Check V SYNC (CPU PWB)
NG
·IC8G1, IC8G3 and their ambient circuit Failure
·MB connector disconnected
OK
·ZD802, ZD803 and their ambient circuit Failure
·S connector Failure
OK
·Check V OSC/DEF circuit Failure (See item 6)
·Digital Control circuit Failure (See item 7)

(Measure by S2 on the DEF PWB PWE-329.)

(Measure the SYNC pulse by C8G3 (H,HV), R702 (SYNC on G) for D-SUB input or C8G1 (H,HV), R704 (SYNC on G) for BNC input on the VIDEO PWB PWE-331.)

(Measure the SYNC pulse by MB2 on the CPU PWB PWE-330.)

4. ABNORMAL PICTURE

4.1 HORIZONTAL SIZE

Check HV Voltage (Measure the voltage by Anode of CRT.)
Normally, the voltage is approx 27kV.

NG → HV circuit Failure (See item 5)

OK ↓

Check 13V Line (Measure the voltage by TP-861 on the VIDEO PWB PWE-331.)

NG → R860, Q860, Q861 and their ambient circuit Failure

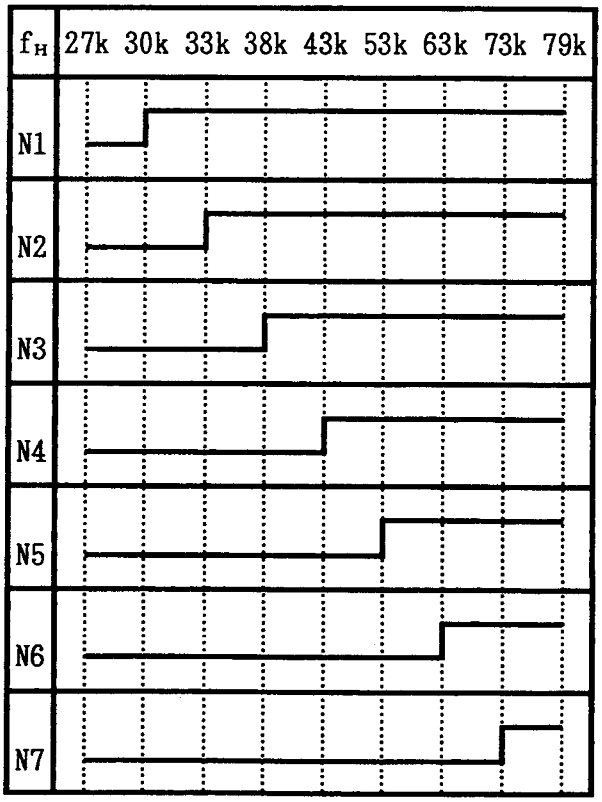
OK ↓

Check Digital Control circuit output (N1~N7) See Fig.1

NG → Digital Control circuit Failure (See item 7)

↓

CONTINUE



(TTL level output)
Fig. 1

CONTINUE

OK

Check S-correction capacitor switching circuit

(Check the operation of Q591~Q596 and C595~C59A.)

NG

- Q591~Q596, C595~C59A and their ambient circuit Failure
- Q50A~Q55A and Q58A, IC510~IC511 and their ambient circuit Failure

OK

Check if P2 voltage is changeable by SW108, SW109

(Measure the voltage by P2 on the DEF PWB PWE-329)

Normally, the voltage is changable from approx. 1V to approx. 11V.

NG

Digital Control circuit Failure (See item 7)

OK

Check Q581 F.B.P. See Fig. 2

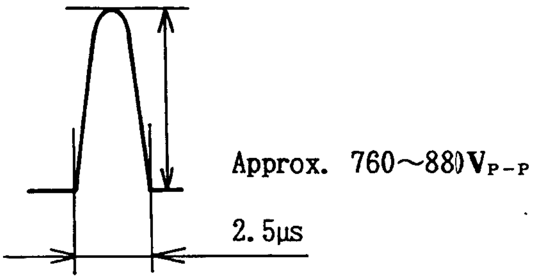


Fig. 2

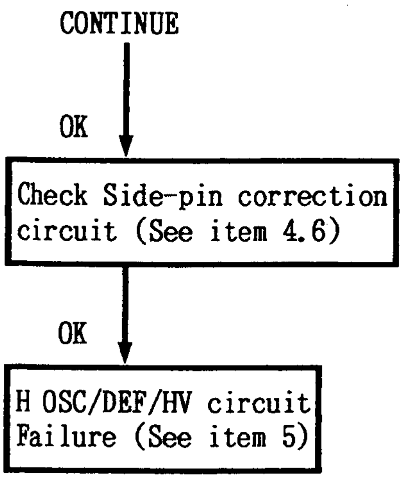
NG

- Q581, C581, C582 and their ambient circuit Failure
- IC5G0, IC5G1, T581 and their ambient circuit Failure

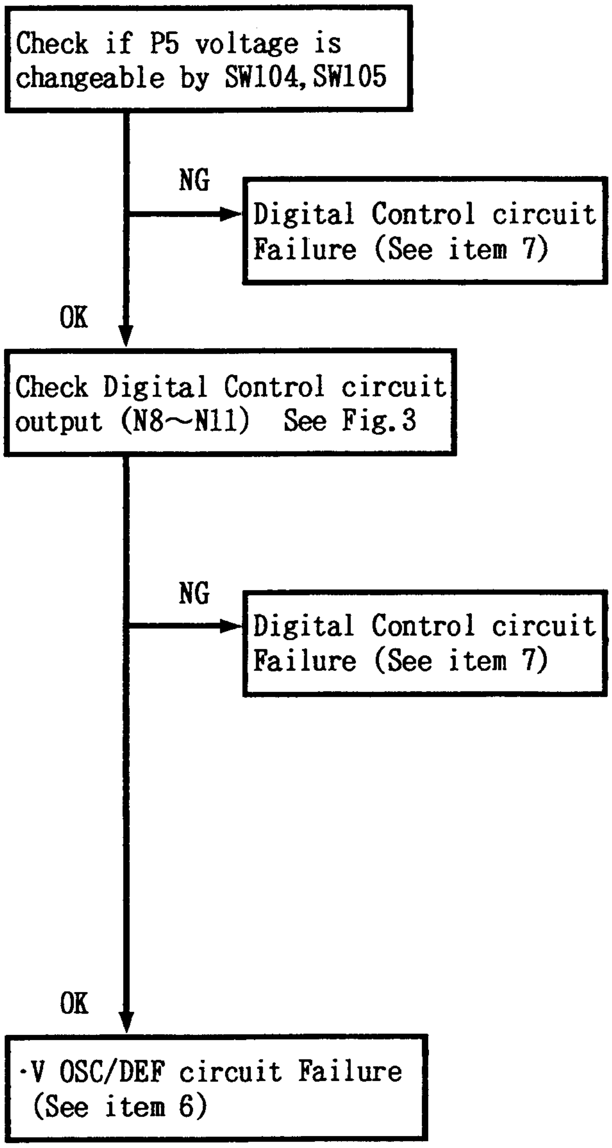
OK

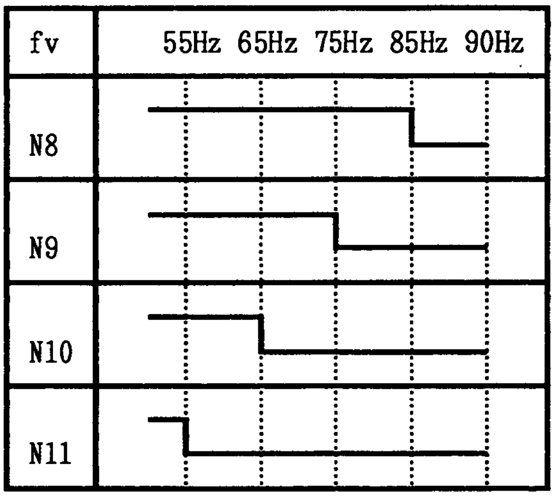
Check Horizontal Linearity correction circuit (See item 4.5.1)

CONTINUE


CONTINUE
OK
Check Side-pin correction circuit (See item 4.6)
OK
H OSC/DEF/HV circuit Failure (See item 5)

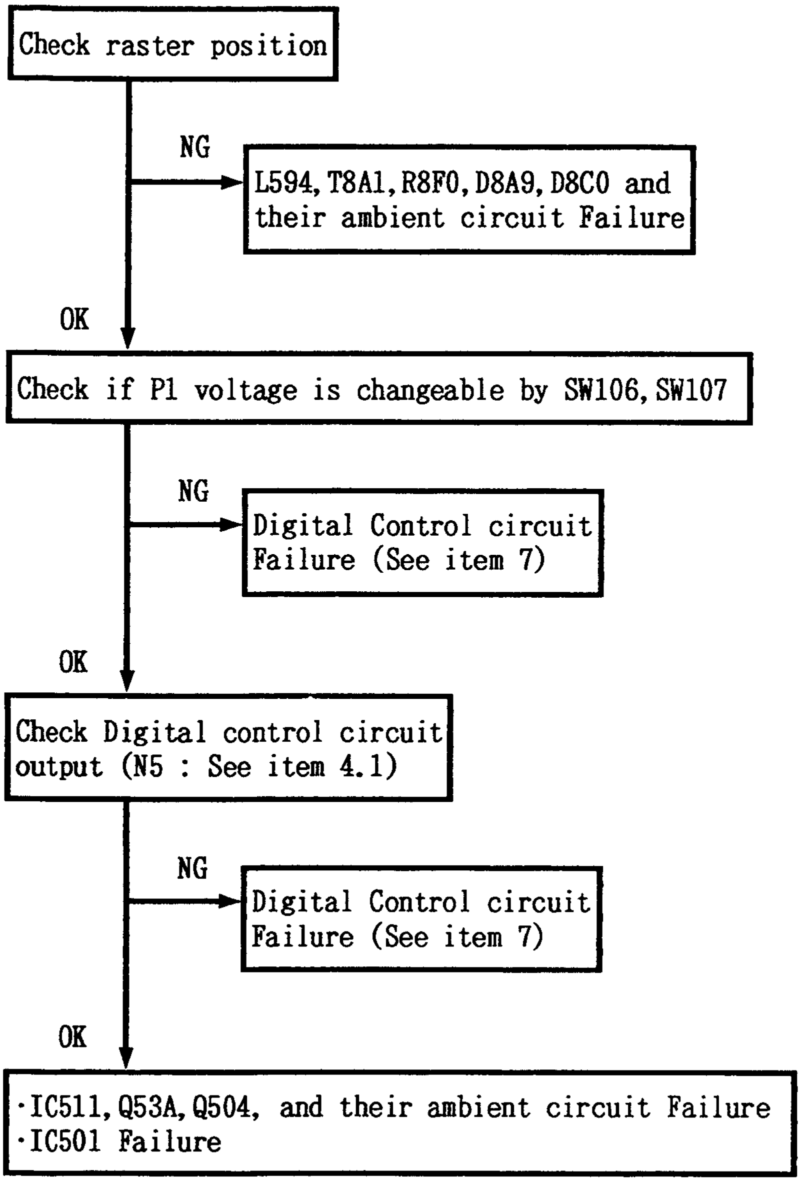
4.2 VERTICAL SIZE


Check if P5 voltage is changeable by SW104,SW105
NG
Digital Control circuit Failure (See item 7)
OK
Check Digital Control circuit output (N8~N11) See Fig.3
NG
Digital Control circuit Failure (See item 7)
OK
·V OSC/DEF circuit Failure (See item 6)

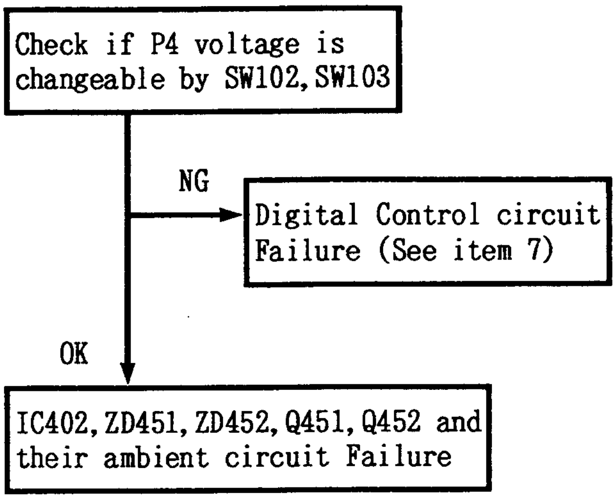

fv
55Hz 65Hz 75Hz 85Hz 90Hz
N8
N9
N10
N11

(TTL level output)
Fig.3

4.3 HORIZONTAL POSITION

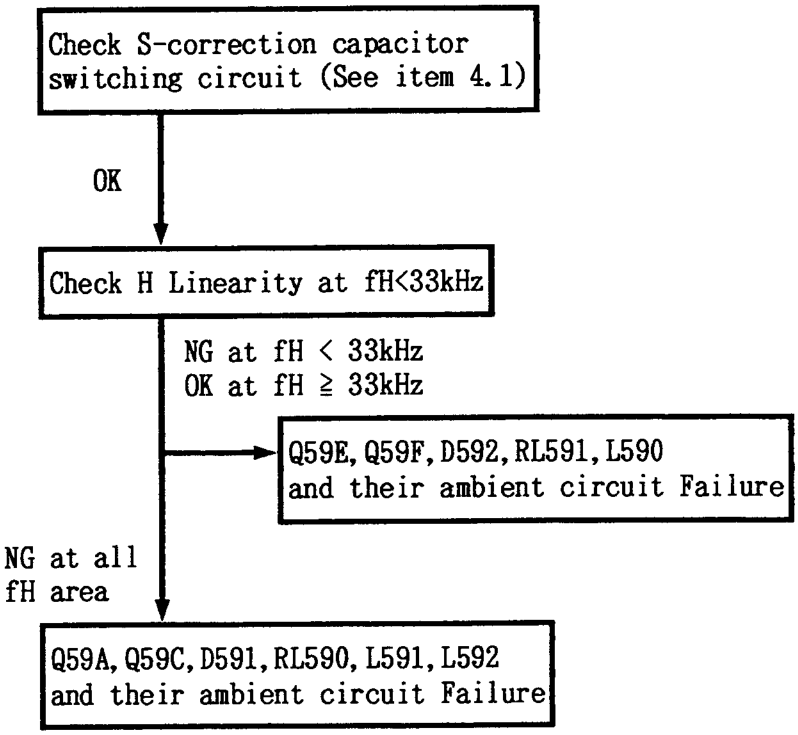

Check raster position
NG
L594, T8A1, R8F0, D8A9, D8C0 and their ambient circuit Failure
OK
Check if P1 voltage is changeable by SW106, SW107
NG
Digital Control circuit Failure (See item 7)
OK
Check Digital control circuit output (N5 : See item 4.1)
NG
Digital Control circuit Failure (See item 7)
OK
·IC511, Q53A, Q504, and their ambient circuit Failure
·IC501 Failure

4.4 VERTICAL POSITION


Check if P4 voltage is changeable by SW102,SW103
NG
Digital Control circuit Failure (See item 7)
OK
IC402,ZD451,ZD452,Q451,Q452 and their ambient circuit Failure

4.5 POOR LINEARITY

4.5.1 HORIZONTAL

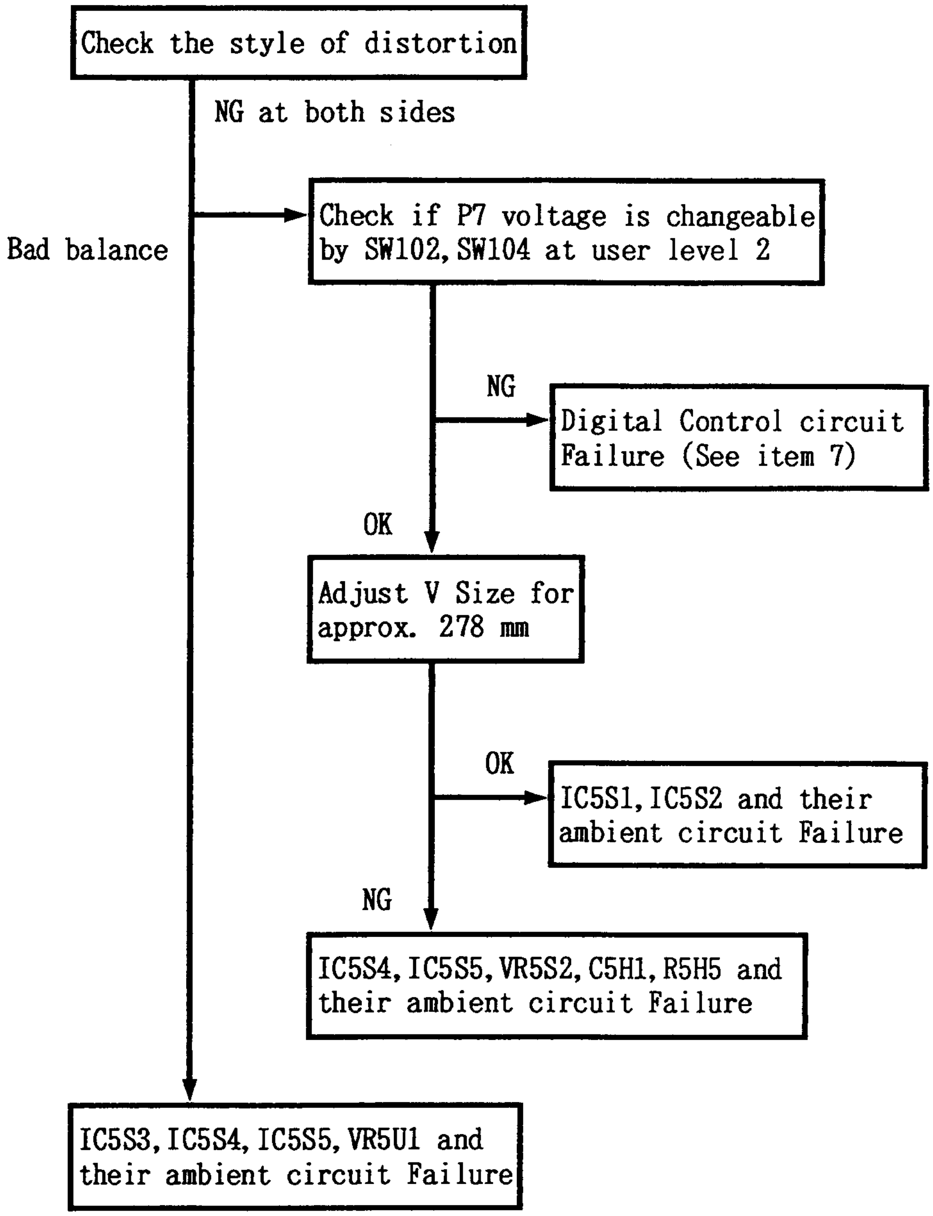

Check S-correction capacitor switching circuit (See item 4.1)
OK
Check H Linearity at fH<33kHz
NG at fH < 33kHz
OK at fH ≧ 33kHz
Q59E,Q59F,D592,RL591,L590 and their ambient circuit Failure
NG at all fH area
Q59A,Q59C,D591,RL590,L591,L592 and their ambient circuit Failure

4.5.2 VERTICAL

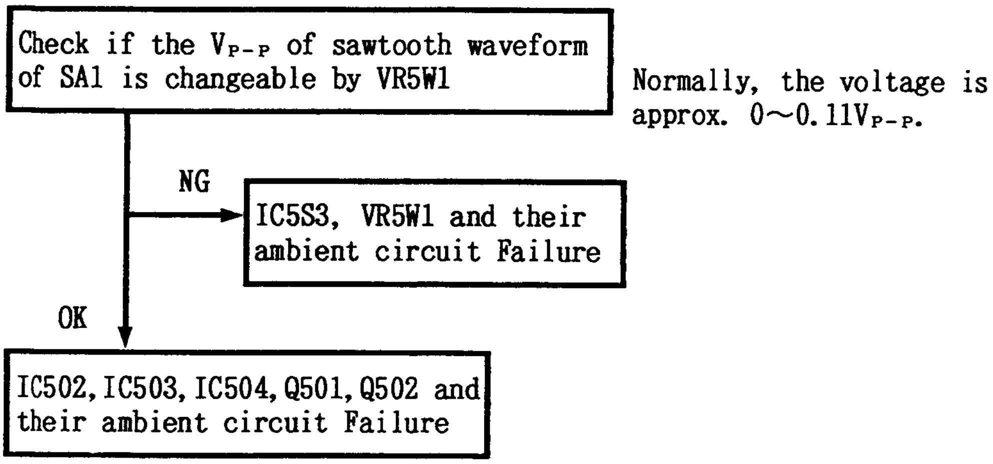
C410, VR441, IC431 and their ambient circuit Failure

4.6 DISTORTION CORRECTION CIRCUIT FAULT

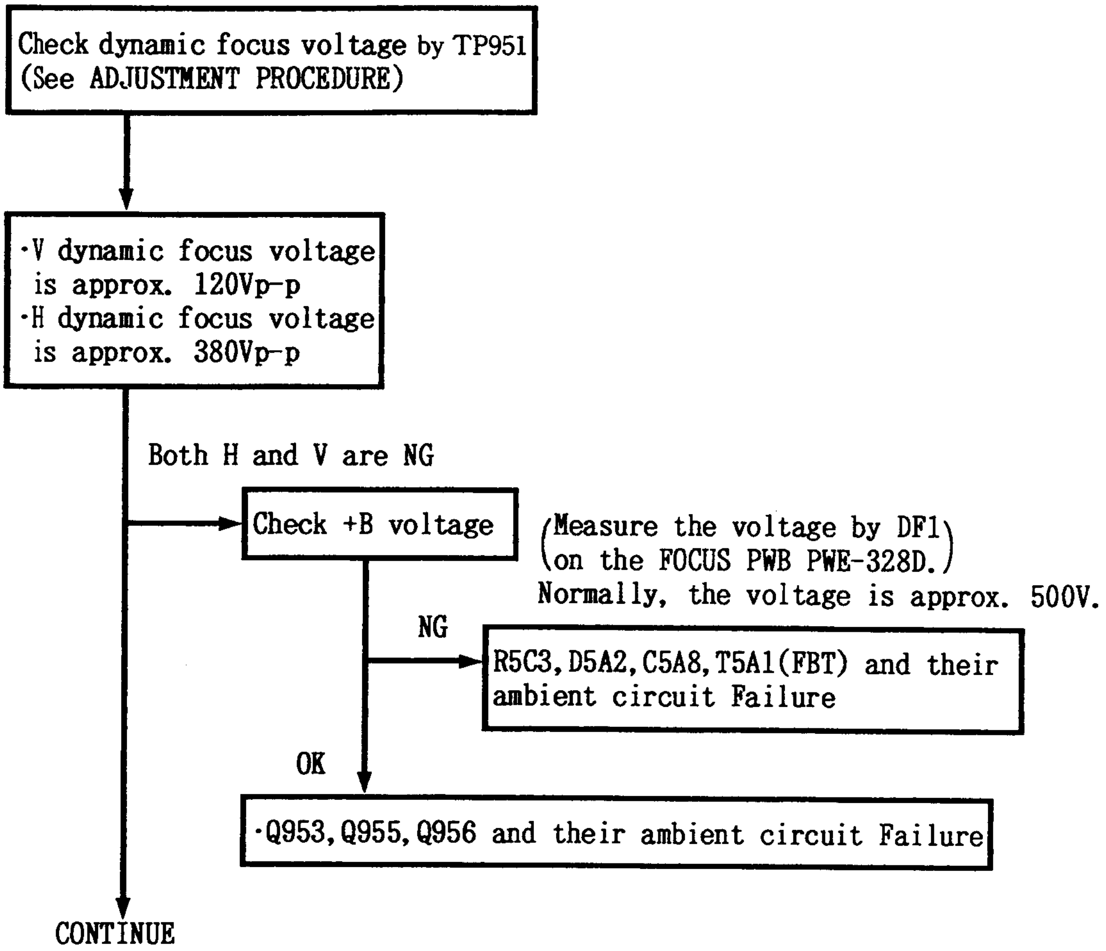
4.6.1 SIDE PINCUSHION CORRECTION CIRCUIT

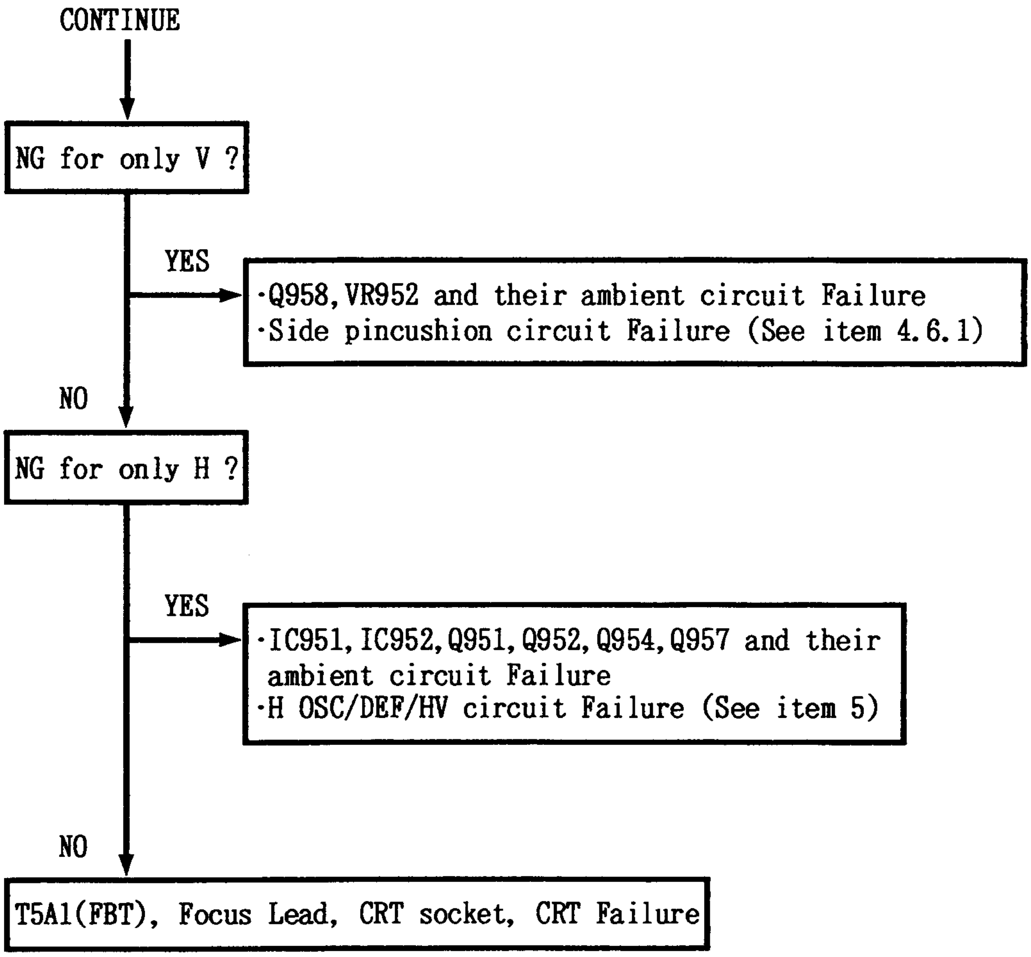

Check the style of distortion
NG at both sides
Bad balance
Check if P7 voltage is changeable by SW102, SW104 at user level 2
NG
Digital Control circuit Failure (See item 7)
OK
Adjust V Size for approx. 278 mm
OK
IC5S1, IC5S2 and their ambient circuit Failure
NG
IC5S4, IC5S5, VR5S2, C5H1, R5H5 and their ambient circuit Failure
IC5S3, IC5S4, IC5S5, VR5U1 and their ambient circuit Failure

4.6.2 PARALLELOGRAM DISTORTION CORRECTION CIRCUIT

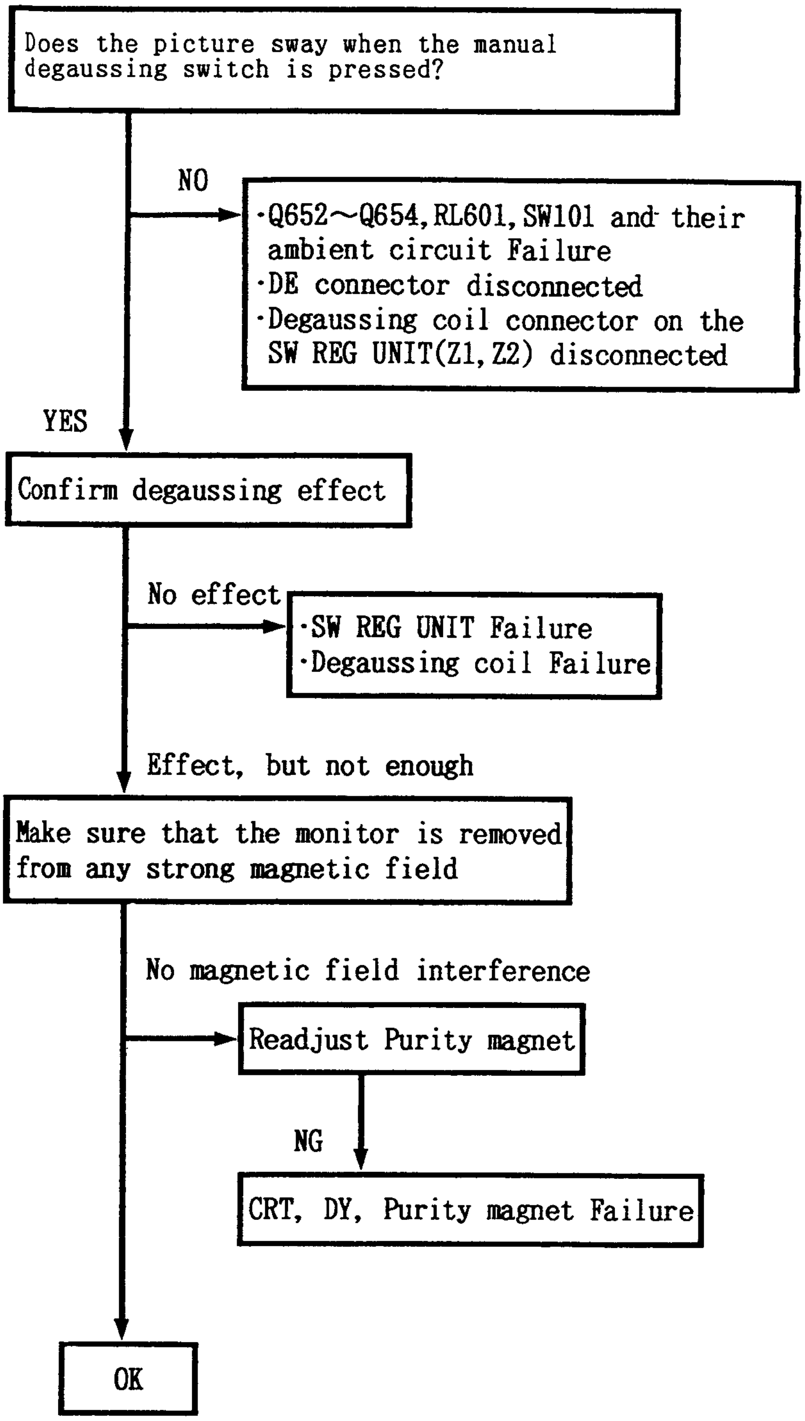

Check if the VP-P of sawtooth waveform of SA1 is changeable by VR5W1
Normally, the voltage is approx. 0~0.11VP-P.
NG
IC5S3, VR5W1 and their ambient circuit Failure
OK
IC502, IC503, IC504, Q501, Q502 and their ambient circuit Failure

4.7 POOR FOCUS


Check dynamic focus voltage by TP951 (See ADJUSTMENT PROCEDURE)
·V dynamic focus voltage is approx. 120Vp-p
·H dynamic focus voltage is approx. 380Vp-p
Both H and V are NG
Check +B voltage
(Measure the voltage by DF1 on the FOCUS PWB PWE-328D.)
Normally, the voltage is approx. 500V.
NG
R5C3, D5A2, C5A8, T5A1(FBT) and their ambient circuit Failure
OK
·Q953, Q955, Q956 and their ambient circuit Failure
CONTINUE

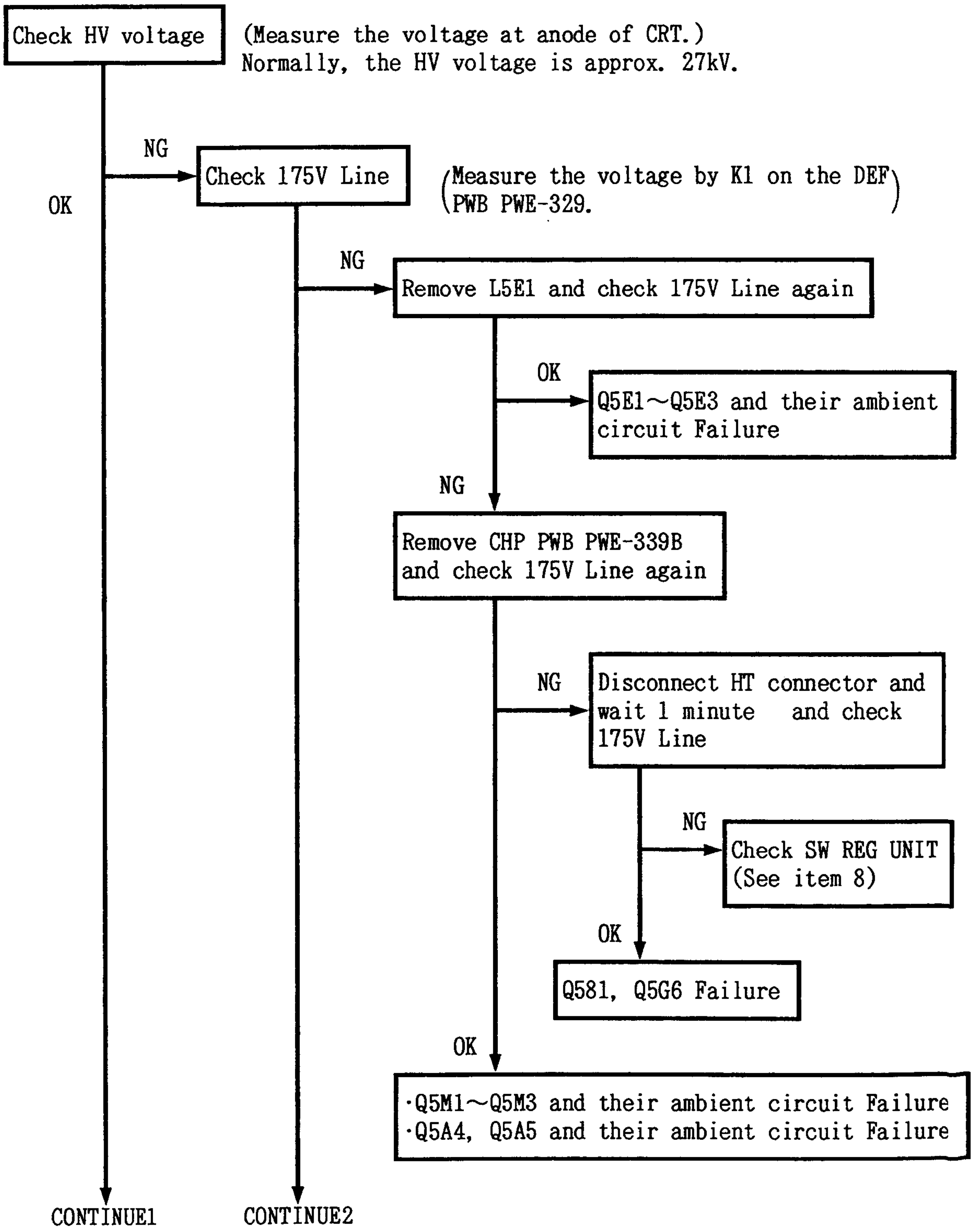

CONTINUE
NG for only V ?
YES
·Q958,VR952 and their ambient circuit Failure
·Side pincushion circuit Failure (See item 4.6.1)
NO
NG for only H ?
YES
·IC951,IC952,Q951,Q952,Q954,Q957 and their ambient circuit Failure
·H OSC/DEF/HV circuit Failure (See item 5)
NO
T5A1(FBT), Focus Lead, CRT socket, CRT Failure

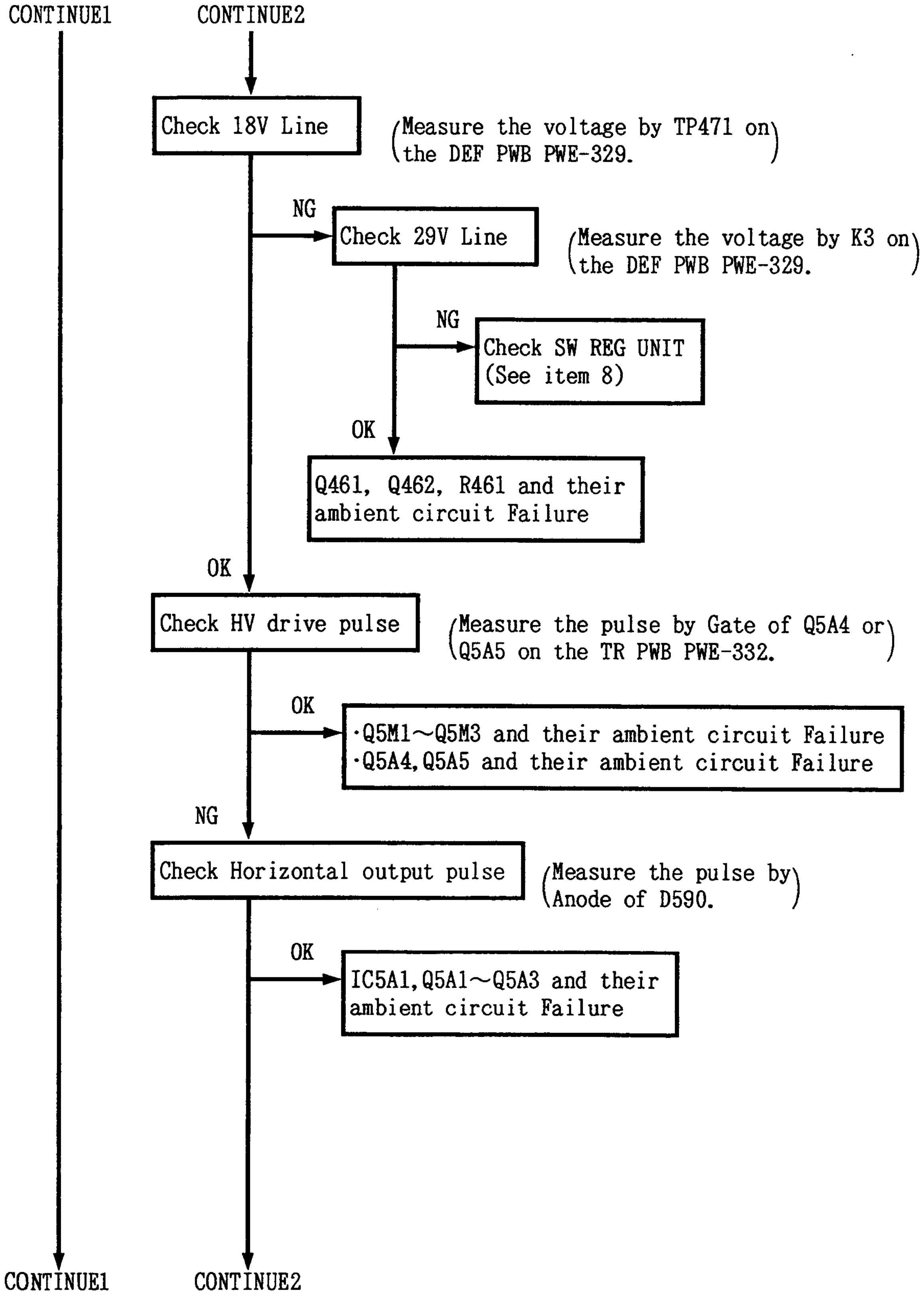
4.8 IMPURITY ON CRT SCREEN

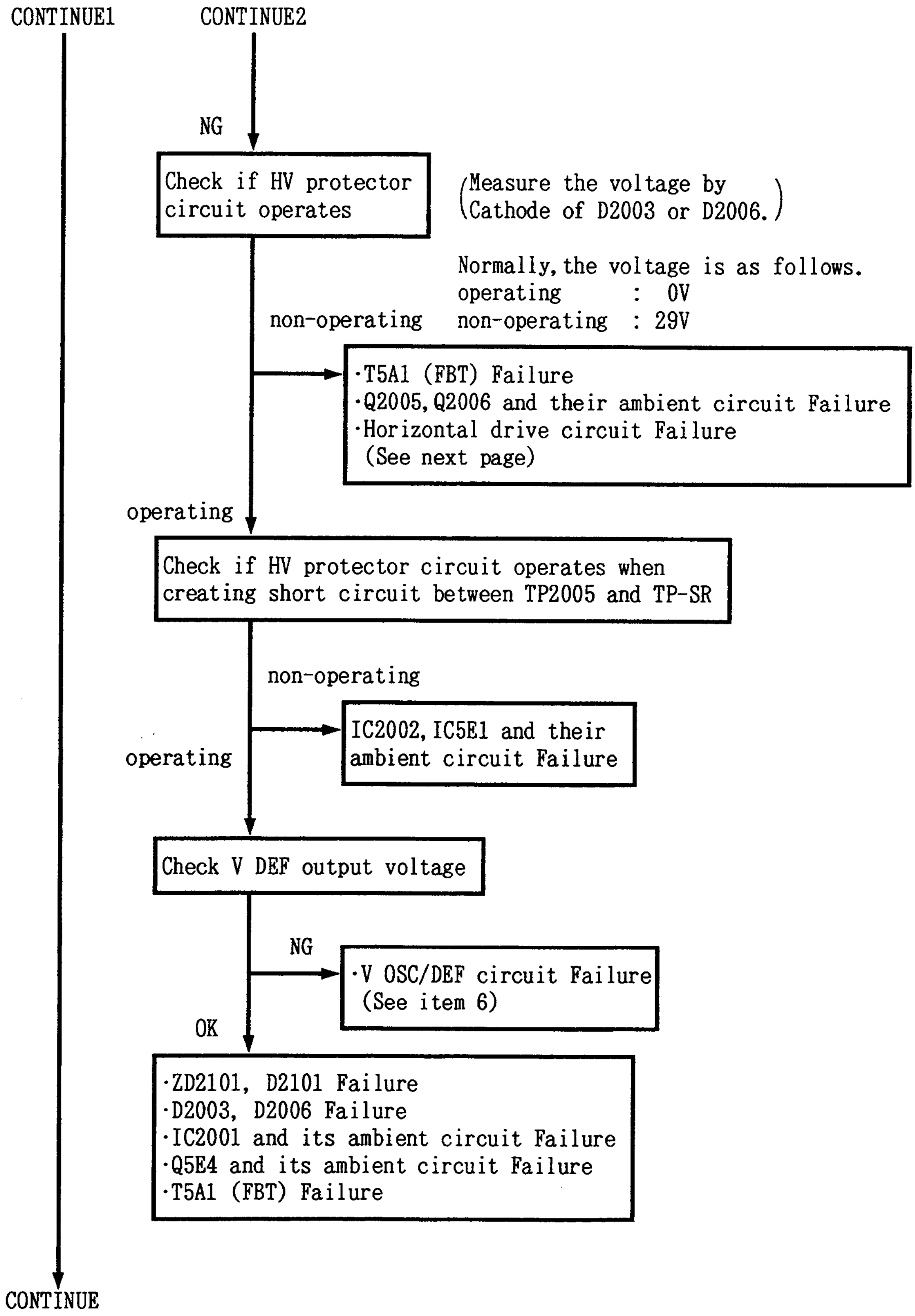

Does the picture sway when the manual degaussing switch is pressed?
NO
·Q652~Q654,RL601,SW101 and their ambient circuit Failure
·DE connector disconnected
·Degaussing coil connector on the SW REG UNIT(Z1,Z2) disconnected
YES
Confirm degaussing effect
No effect
·SW REG UNIT Failure
·Degaussing coil Failure
Effect, but not enough
Make sure that the monitor is removed from any strong magnetic field
No magnetic field interference
Readjust Purity magnet
NG
CRT, DY, Purity magnet Failure
OK

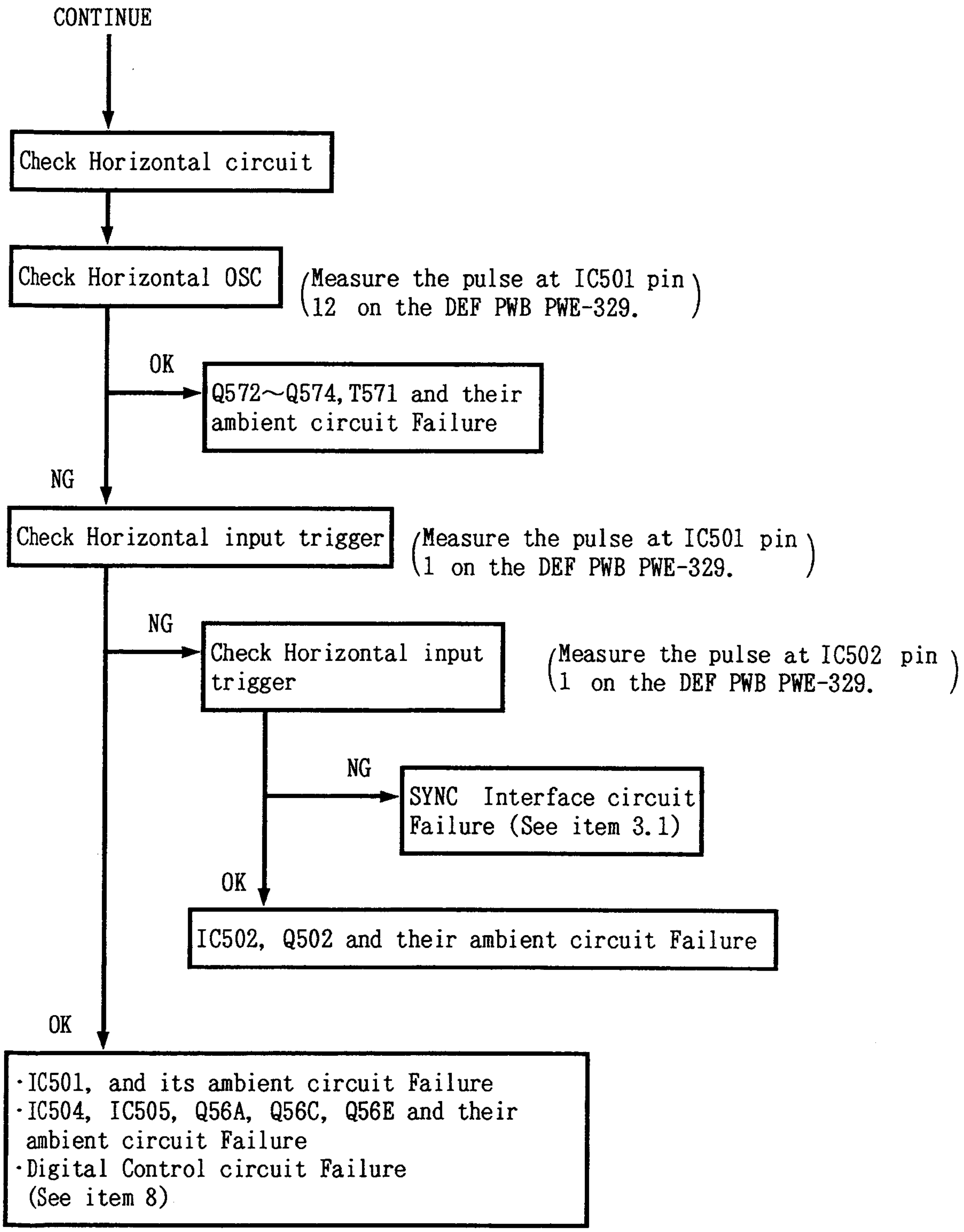
5. H OSC/DEF/HV CIRCUIT FAULT

NO RASTER
UNSTABLE PICTURE
ABNORMAL PICTURE


Check HV voltage
(Measure the voltage at anode of CRT.)
Normally, the HV voltage is approx. 27kV.
NG
OK
Check 175V Line
(Measure the voltage by K1 on the DEF PWB PWE-329.)
NG
Remove L5E1 and check 175V Line again
OK
Q5E1~Q5E3 and their ambient circuit Failure
NG
Remove CHP PWB PWE-339B and check 175V Line again
NG
Disconnect HT connector and wait 1 minute and check 175V Line
NG
Check SW REG UNIT (See item 8)
OK
Q581, Q5G6 Failure
OK
·Q5M1~Q5M3 and their ambient circuit Failure
·Q5A4, Q5A5 and their ambient circuit Failure
CONTINUE1
CONTINUE2


CONTINUE1
CONTINUE2
Check 18V Line
(Measure the voltage by TP471 on the DEF PWB PWE-329.)
NG
Check 29V Line
(Measure the voltage by K3 on the DEF PWB PWE-329.)
NG
Check SW REG UNIT (See item 8)
OK
Q461, Q462, R461 and their ambient circuit Failure
OK
Check HV drive pulse
(Measure the pulse by Gate of Q5A4 or Q5A5 on the TR PWB PWE-332.)
OK
·Q5M1~Q5M3 and their ambient circuit Failure
·Q5A4,Q5A5 and their ambient circuit Failure
NG
Check Horizontal output pulse
(Measure the pulse by Anode of D590.)
OK
IC5A1,Q5A1~Q5A3 and their ambient circuit Failure
CONTINUE1
CONTINUE2

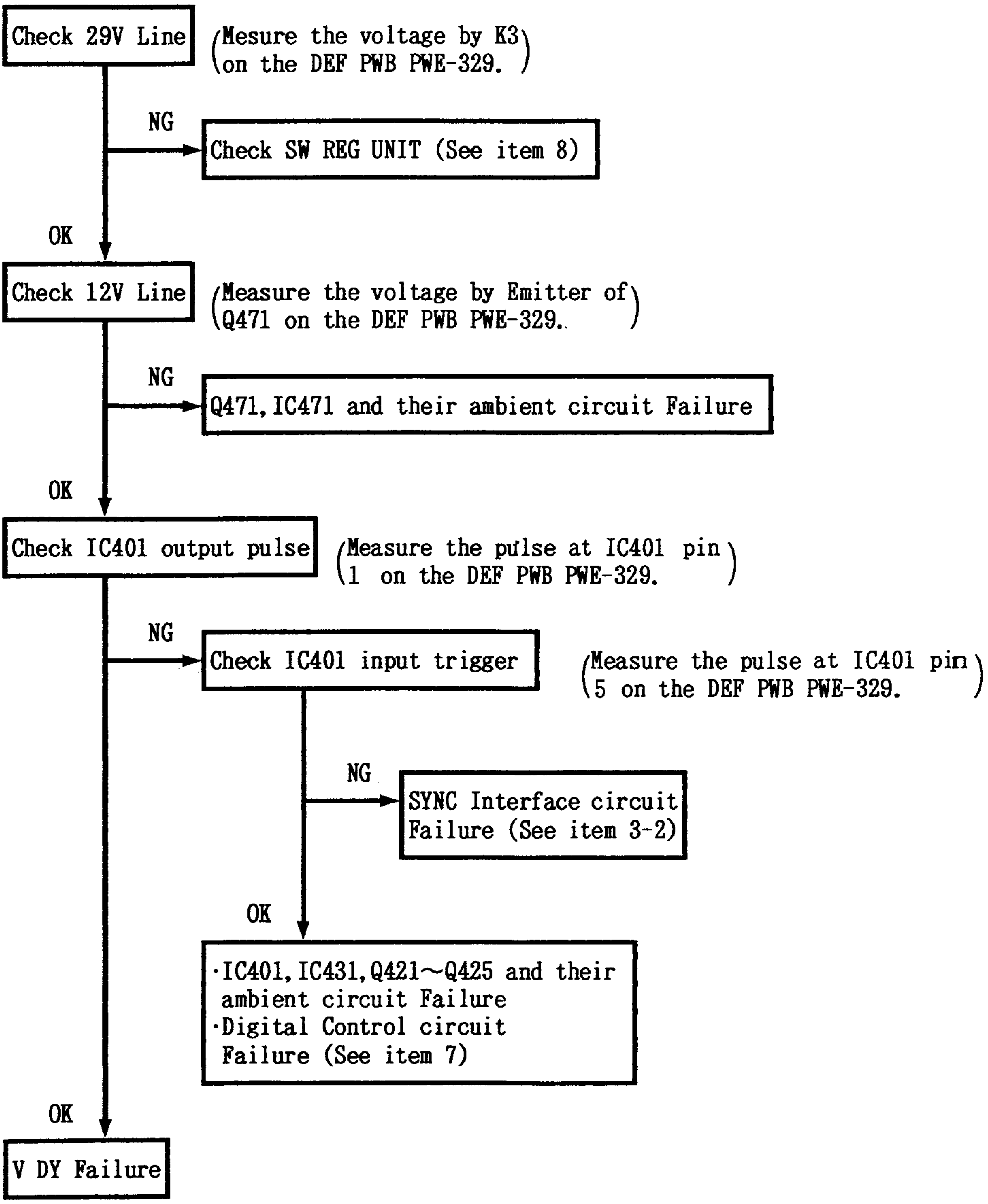

CONTINUE1
CONTINUE2
NG
Check if HV protector circuit operates
(Measure the voltage by Cathode of D2003 or D2006.)
Normally, the voltage is as follows.
operating : 0V
non-operating : 29V
non-operating
·T5A1 (FBT) Failure
·Q2005, Q2006 and their ambient circuit Failure
·Horizontal drive circuit Failure
(See next page)
operating
Check if HV protector circuit operates when creating short circuit between TP2005 and TP-SR
non-operating
IC2002, IC5E1 and their ambient circuit Failure
operating
Check V DEF output voltage
NG
·V OSC/DEF circuit Failure
(See item 6)
OK
·ZD2101, D2101 Failure
·D2003, D2006 Failure
·IC2001 and its ambient circuit Failure
·Q5E4 and its ambient circuit Failure
·T5A1 (FBT) Failure
CONTINUE


CONTINUE
Check Horizontal circuit
Check Horizontal OSC
(Measure the pulse at IC501 pin 12 on the DEF PWB PWE-329.)
OK
Q572~Q574, T571 and their ambient circuit Failure
NG
Check Horizontal input trigger
(Measure the pulse at IC501 pin 1 on the DEF PWB PWE-329.)
NG
Check Horizontal input trigger
(Measure the pulse at IC502 pin 1 on the DEF PWB PWE-329.)
NG
SYNC Interface circuit Failure (See item 3.1)
OK
IC502, Q502 and their ambient circuit Failure
OK
·IC501, and its ambient circuit Failure
·IC504, IC505, Q56A, Q56C, Q56E and their ambient circuit Failure
·Digital Control circuit Failure (See item 8)

NOTE 1. Q5G6 and Q581 will be broken at same time.
2. Q5M3 and Q5A4 or Q5A5 will be broken at same time.

6. V OSC/DEF CIRCUIT FAULT

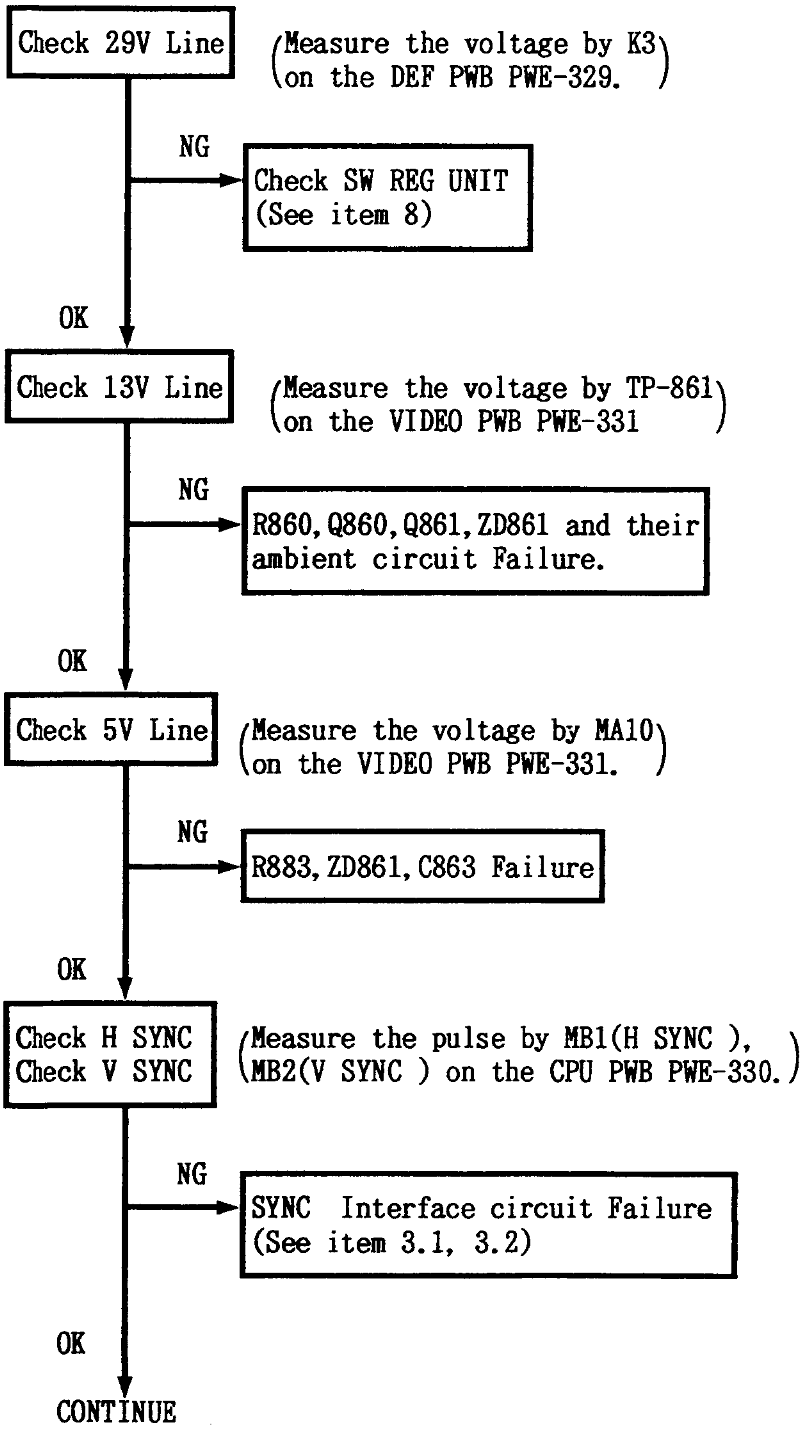
NO RASTER
UNSTABLE PICTURE
ABNORMAL PICTURE


Check 29V Line
(Mesure the voltage by K3 on the DEF PWB PWE-329.)
NG
Check SW REG UNIT (See item 8)
OK
Check 12V Line
(Measure the voltage by Emitter of Q471 on the DEF PWB PWE-329.)
NG
Q471, IC471 and their ambient circuit Failure
OK
Check IC401 output pulse
(Measure the pulse at IC401 pin 1 on the DEF PWB PWE-329.)
NG
Check IC401 input trigger
(Measure the pulse at IC401 pin 5 on the DEF PWB PWE-329.)
NG
SYNC Interface circuit Failure (See item 3-2)
OK
·IC401, IC431, Q421～Q425 and their ambient circuit Failure
·Digital Control circuit Failure (See item 7)
OK
V DY Failure

7. DIGITAL CONTROL CIRCUIT FAULT

UNSTABLE PICTURE
ABNORMAL PICTURE

7.1 DIGITAL CONTROL ERROR

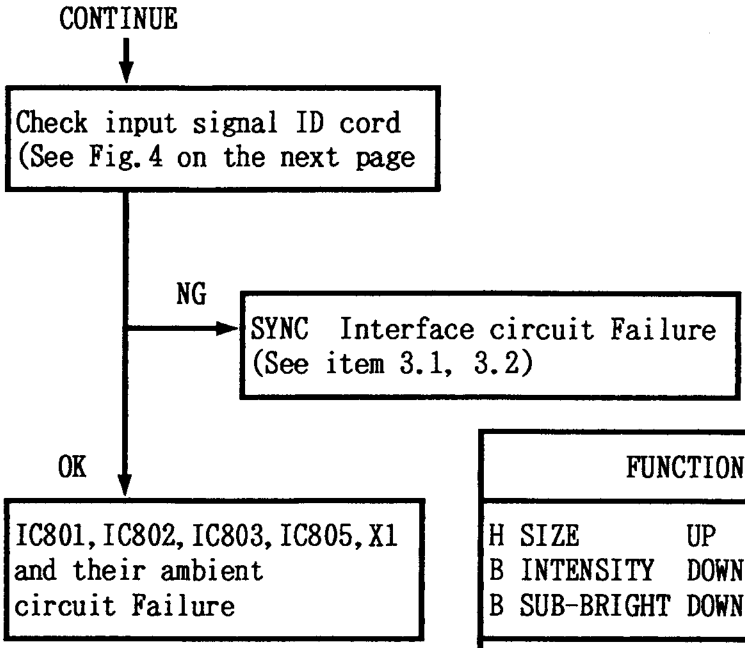

Check 29V Line
NG
Check SW REG UNIT (See item 8)
OK
Check 13V Line
NG
R860, Q860, Q861, ZD861 and their ambient circuit Failure.
OK
Check 5V Line
NG
R883, ZD861, C863 Failure
OK
Check H SYNC
Check V SYNC
NG
SYNC Interface circuit Failure (See item 3.1, 3.2)
OK
CONTINUE

(Measure the voltage by K3 on the DEF PWB PWE-329.)

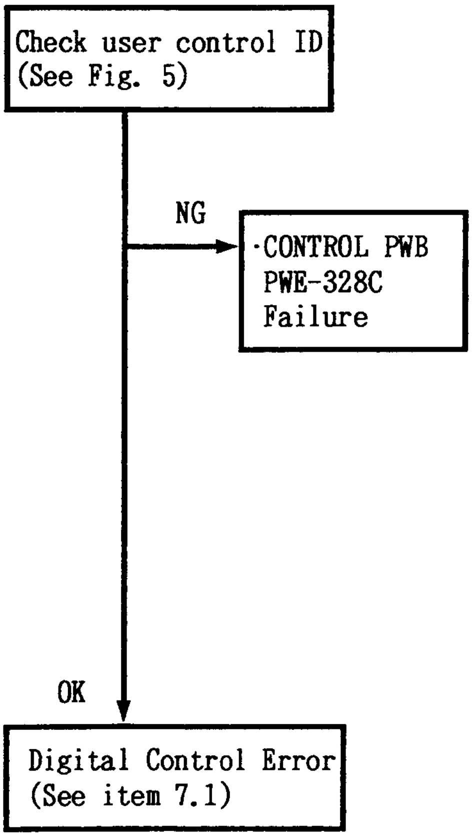
(Measure the voltage by TP-861 on the VIDEO PWB PWE-331)

(Measure the voltage by MA10 on the VIDEO PWB PWE-331.)

(Measure the pulse by MB1(H SYNC), MB2(V SYNC) on the CPU PWB PWE-330.)


CONTINUE
Check input signal ID cord (See Fig.4 on the next page
NG
SYNC Interface circuit Failure (See item 3.1, 3.2)
OK
IC801, IC802, IC803, IC805, X1 and their ambient circuit Failure

7.2 USER CONTROL ERROR


Check user control ID (See Fig. 5)
NG
·CONTROL PWB PWE-328C Failure
OK
Digital Control Error (See item 7.1)

FUNCTION	UL	C2	C3	C4	C5	C6	C7
H SIZE UP	1	H	L	L	L	H	L
B INTENSITY DOWN	2						
B SUB-BRIGHT DOWN	3						
H SIZE DOWN	1					L	H
R INTENSITY DOWN	2						
R SUB-BRIGHT DOWN	3						
H POSITION UP (RIGHT)	1	L	H	L	L	H	L
B INTENSITY UP	2						
B SUB-BRIGHT UP	3						
H POSITION DOWN (LEFT)	1					L	H
R INTENSITY UP	2						
R SUB-BRIGHT UP	3						
V SIZE UP	1	L	L	H	L	H	L
G INTENSITY DOWN	2						
G SUB-BRIGHT DOWN	3						
V SIZE DOWN	1					L	H
SIDE-PIN DOWN (PIN)	2						
NO FUNCTION	3						
V POSITION UP	1	L	L	L	H	H	L
G INTENSITY UP	2						
G SUB-BRIGHT UP	3						
V POSITION DOWN	1					L	H
SIDE-PIN UP (BARREL)	2						
NO FUNCTION	3						

NOTE C2～C7 : TTL level

Fig. 5

INPUT SIGNAL	MB1 (fH)	MB2 (fV)	MA2 (HP)	MA3 (VP)	MA4 (VE)	INPUT SIGNAL	MB1 (fH)	MB2 (fV)	MA2 (HP)	MA3 (VP)	MA4 (VE)
VGA350	②	—	L	H	H	USER1	①	—	—	—	—
VGA400	②	—	H	L	H	USER2	②	—	—	—	—
VGA480	②	—	H	H	H	USER3	③	②	—	—	—
800*600(56)	③	①	—	—	—	USER4	③	④	L	H	H
MAC-Ⅱ	③	③	—	—	—	USER5	③	④	H	L	H
8514A	③	④	L	L	H	USER6	③	④	H	H	H
1024*768(60)	⑤	⑤	—	—	—	USER7	③	④	—	—	—
800*600(72)	⑤	⑥	—	—	—	USER8	④	⑤	—	—	—
1024*768(70)	⑦	—	—	—	—	USER9	④	⑥	—	—	—
1280*1024(60)	⑨	⑤	—	—	—	USER10	⑥	—	—	—	—
1280*1024(70)	⑪	⑦	—	—	—	USER11	⑧	—	—	—	—
1280*1024(74)	⑪	⑧	—	—	—	USER12	⑨	⑥	—	—	—
						USER13	⑩	—	—	—	—

Note 1. MB1
① $27\text{kHz} \leqq f_H < 29\text{kHz}$
② $29\text{kHz} \leqq f_H < 33\text{kHz}$
③ $33\text{kHz} \leqq f_H < 43\text{kHz}$
④ $43\text{kHz} \leqq f_H < 47\text{kHz}$
⑤ $47\text{kHz} \leqq f_H < 50\text{kHz}$
⑥ $50\text{kHz} \leqq f_H < 54\text{kHz}$
⑦ $54\text{kHz} \leqq f_H < 58\text{kHz}$
⑧ $58\text{kHz} \leqq f_H < 62\text{kHz}$
⑨ $62\text{kHz} \leqq f_H < 66\text{kHz}$
⑩ $66\text{kHz} \leqq f_H < 71\text{kHz}$
⑪ $71\text{kHz} \leqq f_H \leqq 79\text{kHz}$

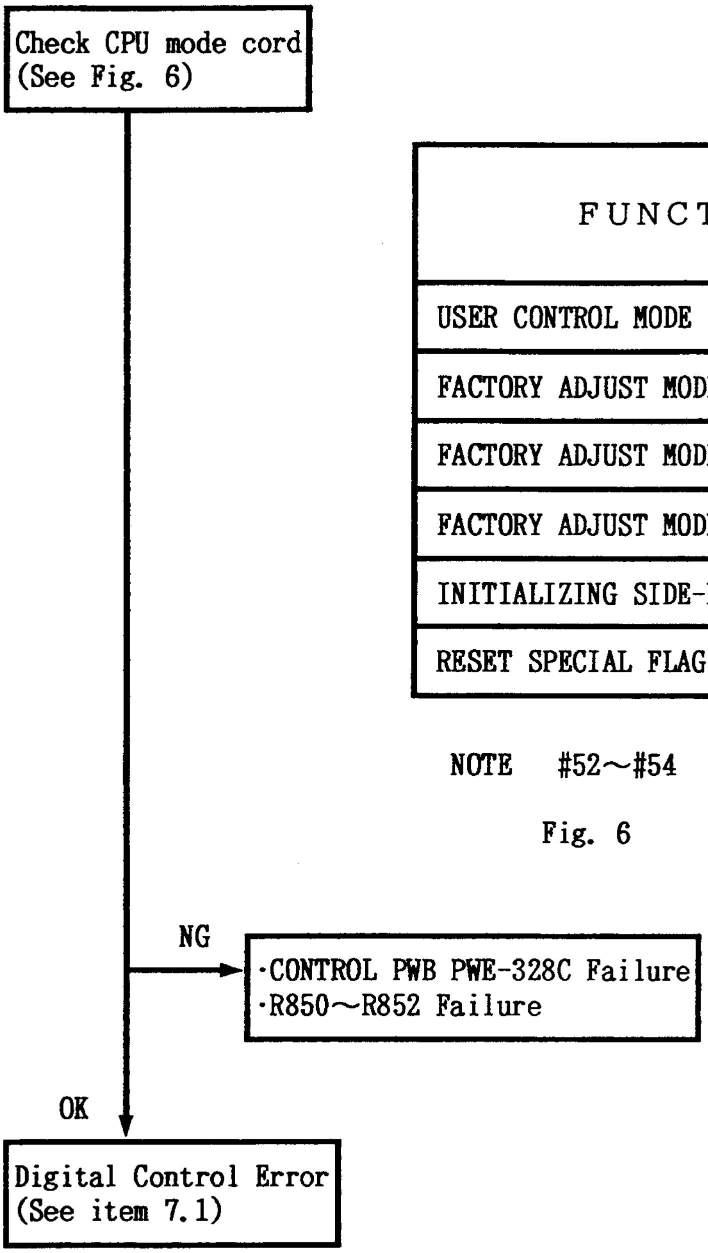
MB2
① $55\text{Hz} \leqq f_V < 58\text{Hz}$
② $58\text{Hz} \leqq f_V < 63\text{Hz}$
③ $63\text{Hz} \leqq f_V < 70\text{Hz}$
④ $70\text{Hz} \leqq f_V \leqq 90\text{Hz}$
⑤ $55\text{Hz} \leqq f_V < 63\text{Hz}$
⑥ $63\text{Hz} \leqq f_V \leqq 90\text{Hz}$
⑦ $55\text{Hz} \leqq f_V < 73\text{Hz}$
⑧ $73\text{Hz} \leqq f_V \leqq 90\text{Hz}$

2. MA2～MA4 :TTL level

3. "—" means any level enable

Fig. 4

7.3 MEMORY ACCESS ERROR


Check CPU mode cord
(See Fig. 6)
NG
·CONTROL PWB PWE-328C Failure
·R850～R852 Failure
OK
Digital Control Error
(See item 7.1)

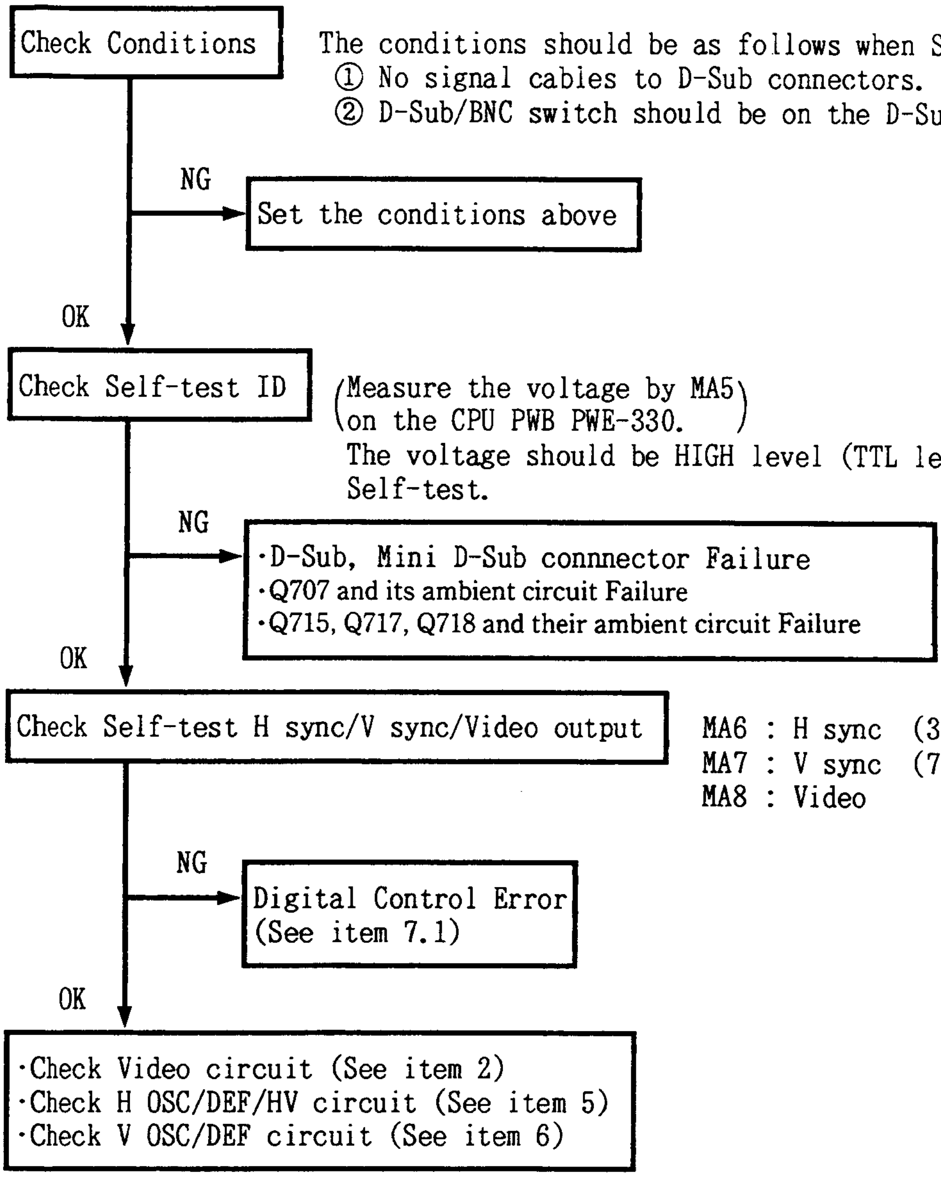
FUNCTION	IC801		
	#52	#53	#54
USER CONTROL MODE	L	L	L
FACTORY ADJUST MODE1 (PICTURE DATA)	L	L	H
FACTORY ADJUST MODE2 (COLOR DATA)	L	H	L
FACTORY ADJUST MODE3 (PICTURE DATA)	L	H	H
INITIALIZING SIDE-PIN DATA	H	L	L
RESET SPECIAL FLAG FOR ADJUSTING	H	H	H

NOTE #52～#54 : TTL level

Fig. 6

(Cf). If two different signals are put into this same memory location, the most recent signal will be written to this memory and the previous signal erased. Therefore, an error could occur when the microprocessor will have the same ID cord for two different signals.

7.4 SELF-TEST ERROR

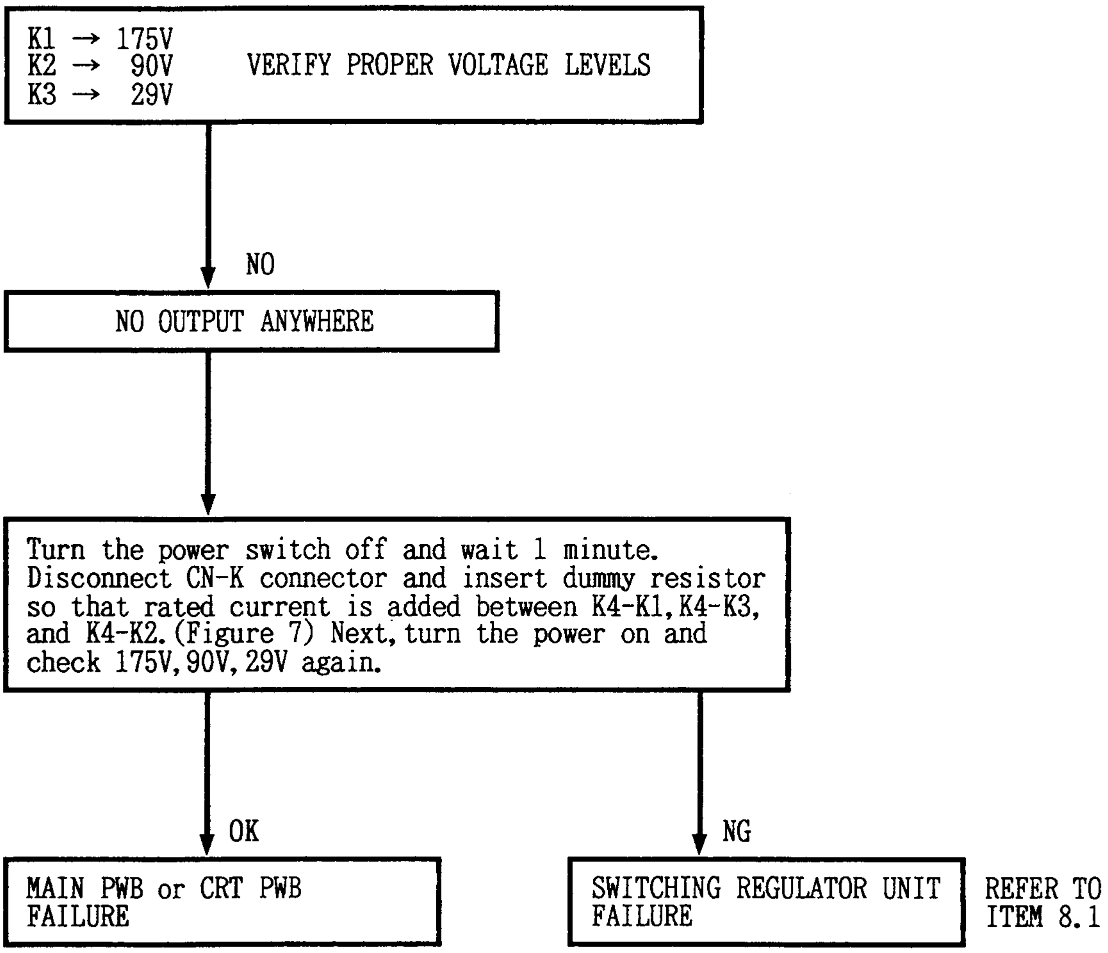

Check Conditions
NG
Set the conditions above
OK
Check Self-test ID
NG
·D-Sub, Mini D-Sub connector Failure
·Q707 and its ambient circuit Failure
·Q715, Q717, Q718 and their ambient circuit Failure
OK
Check Self-test H sync/V sync/Video output
NG
Digital Control Error
(See item 7.1)
OK
·Check Video circuit (See item 2)
·Check H OSC/DEF/HV circuit (See item 5)
·Check V OSC/DEF circuit (See item 6)

The conditions should be as follows when Self-test.
① No signal cables to D-Sub connectors.
② D-Sub/BNC switch should be on the D-Sub position.

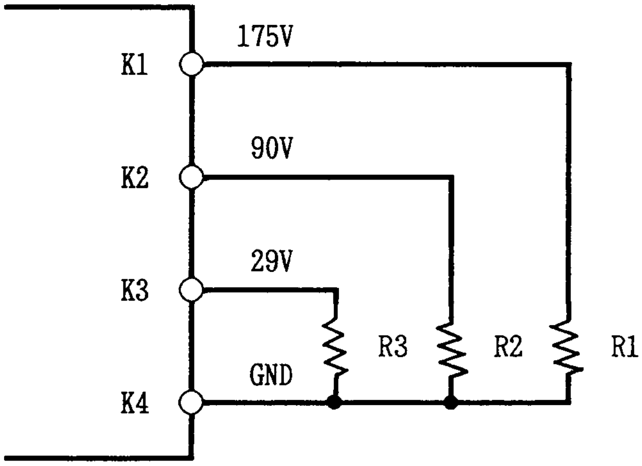
(Measure the voltage by MA5
on the CPU PWB PWE-330.)
The voltage should be HIGH level (TTL level) when Self-test.

MA6 : H sync (30.3 kHz)
MA7 : V sync (70.0 Hz)
MA8 : Video

8. SWITCHING REGULATOR UNIT


K1 → 175V
K2 → 90V
K3 → 29V
VERIFY PROPER VOLTAGE LEVELS
NO
NO OUTPUT ANYWHERE
OK
NG
MAIN PWB or CRT PWB FAILURE
SWITCHING REGULATOR UNIT FAILURE
REFER TO ITEM 8.1

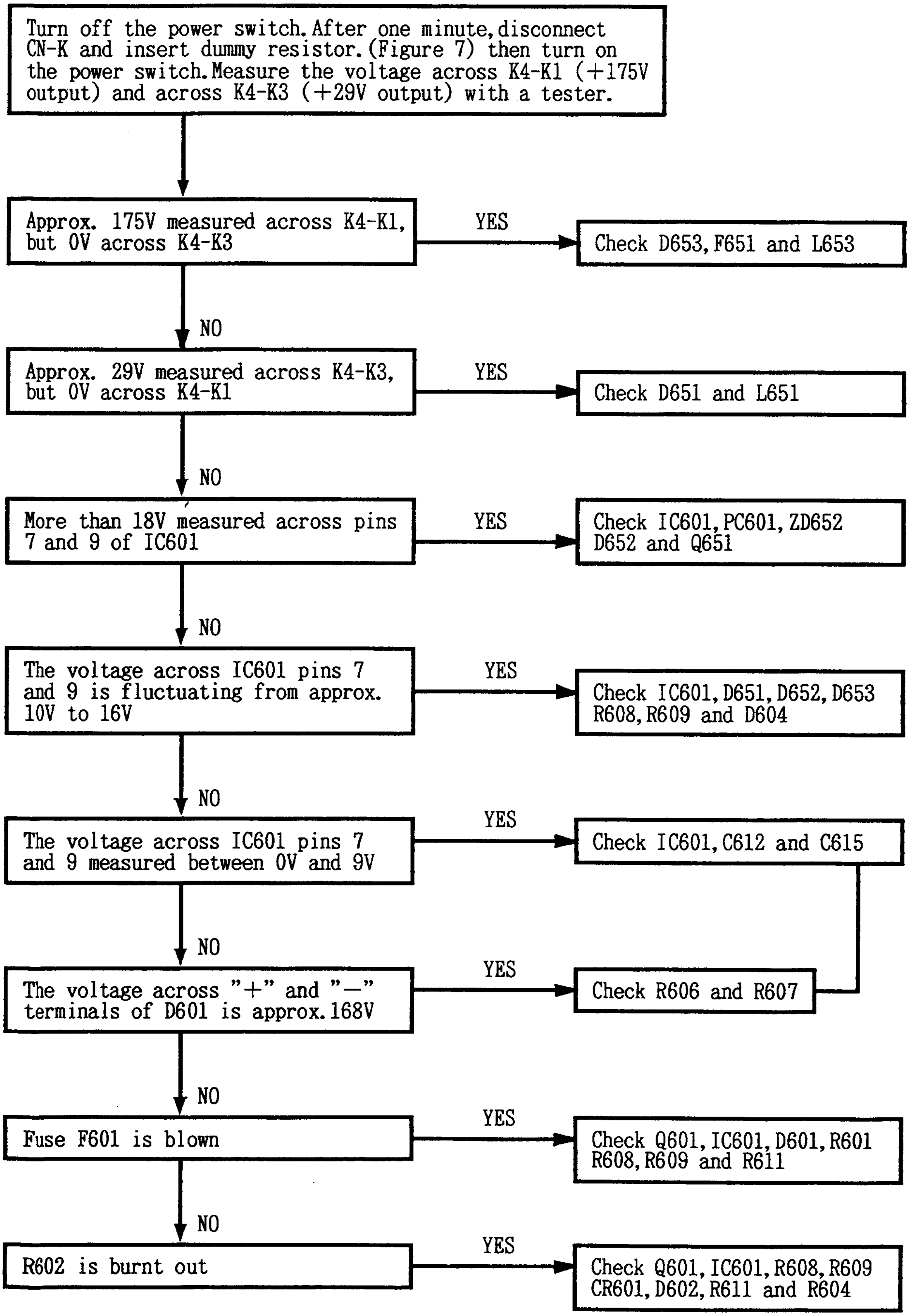
Turn the power switch off and wait 1 minute. Disconnect CN-K connector and insert dummy resistor so that rated current is added between K4-K1, K4-K3, and K4-K2. (Figure 7) Next, turn the power on and check 175V, 90V, 29V again.


K1
175V
K2
90V
K3
29V
GND
K4
R3
R2
R1

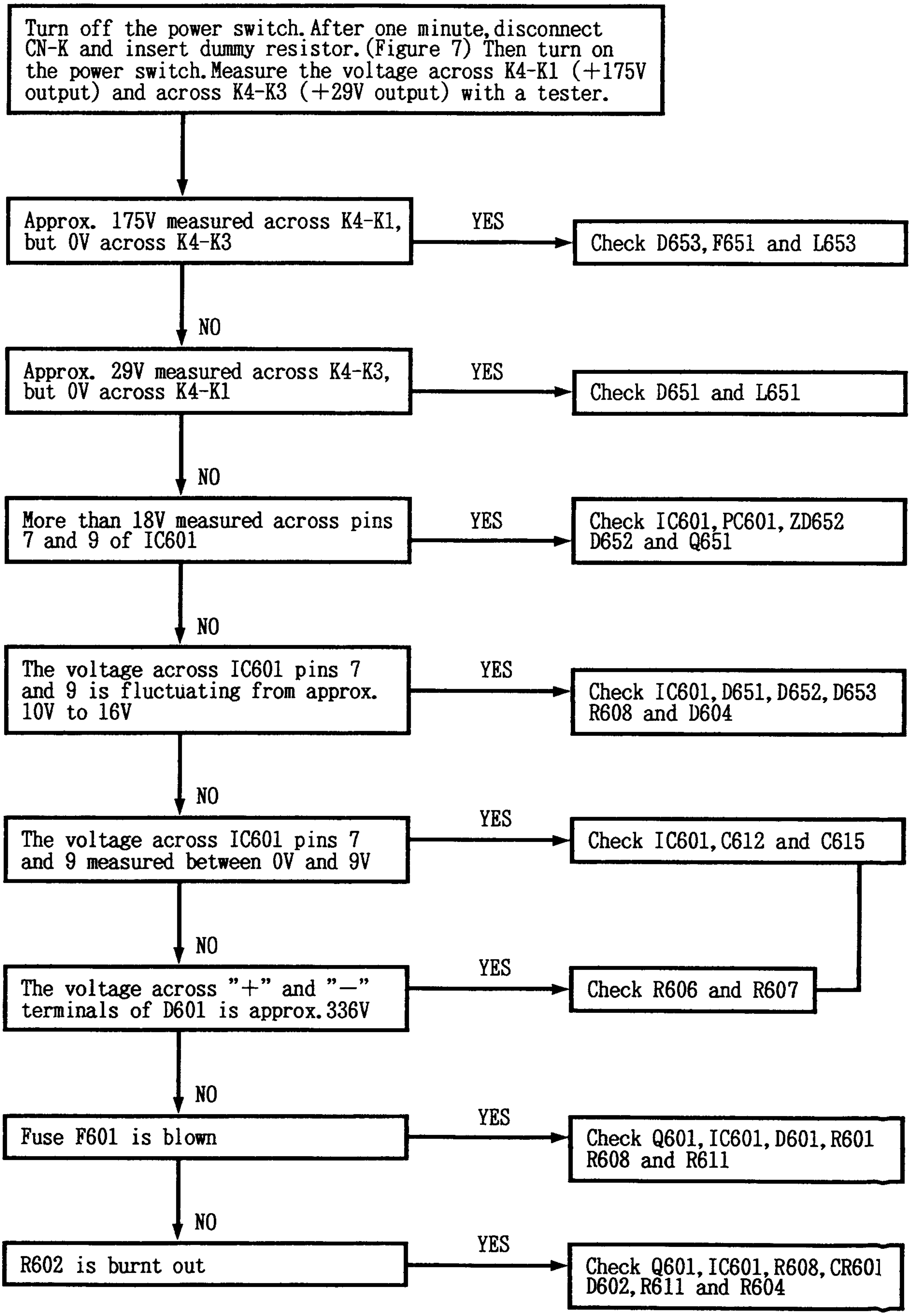
175V	260 ～ 610mA (673.1Ω ～ 286.9Ω)
90V	0 ～ 390mA (230.8Ω ～ OPEN)
29V	750 ～ 1600mA (38.7Ω ～ 18.1Ω)

Fig. 7 Rated load current at K1, K2, K3

8.1 THE SWITCHING REGULATOR UNIT FAILURE (JC-2141UMA/JC-2142UMA)


Turn off the power switch. After one minute, disconnect CN-K and insert dummy resistor. (Figure 7) then turn on the power switch. Measure the voltage across K4-K1 (+175V output) and across K4-K3 (+29V output) with a tester.
Approx. 175V measured across K4-K1, but 0V across K4-K3
YES
Check D653, F651 and L653
NO
Approx. 29V measured across K4-K3, but 0V across K4-K1
YES
Check D651 and L651
NO
More than 18V measured across pins 7 and 9 of IC601
YES
Check IC601, PC601, ZD652 D652 and Q651
NO
The voltage across IC601 pins 7 and 9 is fluctuating from approx. 10V to 16V
YES
Check IC601, D651, D652, D653 R608, R609 and D604
NO
The voltage across IC601 pins 7 and 9 measured between 0V and 9V
YES
Check IC601, C612 and C615
NO
The voltage across "+" and "−" terminals of D601 is approx. 168V
YES
Check R606 and R607
NO
Fuse F601 is blown
YES
Check Q601, IC601, D601, R601 R608, R609 and R611
NO
R602 is burnt out
YES
Check Q601, IC601, R608, R609 CR601, D602, R611 and R604

8.2 THE SWITCHING REGULATOR UNIT FAILURE (JC-2141UMB/B(EE)/R)



Turn off the power switch. After one minute, disconnect CN-K and insert dummy resistor. (Figure 7) Then turn on the power switch. Measure the voltage across K4-K1 (+175V output) and across K4-K3 (+29V output) with a tester.

Approx. 175V measured across K4-K1, but 0V across K4-K3

Check D653, F651 and L653

Approx. 29V measured across K4-K3, but 0V across K4-K1

Check D651 and L651

More than 18V measured across pins 7 and 9 of IC601

Check IC601, PC601, ZD652 D652 and Q651

The voltage across IC601 pins 7 and 9 is fluctuating from approx. 10V to 16V

Check IC601, D651, D652, D653 R608 and D604

The voltage across IC601 pins 7 and 9 measured between 0V and 9V

Check IC601, C612 and C615

The voltage across "+" and "−" terminals of D601 is approx. 336V

Check R606 and R607

Fuse F601 is blown

Check Q601, IC601, D601, R601 R608 and R611

R602 is burnt out

Check Q601, IC601, R608, CR601 D602, R611 and R604

CIRCUIT DESCRIPTION

TABLE OF CONTENTS

PAGE

1. INTERFACE CIRCUIT 89
  1.1 REGULATOR 89
    1.1.1 +12V REGULATOR 89
    1.1.2 −12V REGULATOR 89
    1.1.3 +6V REGULATOR 89
  1.2 BNC/D-SUB SWITCHING CIRCUIT 92
  1.3 SYNC INTERFACE CIRCUIT 93
  1.4 SELF TEST CIRCUIT 95

2. VIDEO CIRCUIT 96
  2.1 VIDEO SIGNAL AMPLIFIER 96
  2.2 BRIGHTNESS AND CUT-OFF CIRCUIT 97
  2.3 CATHODE CLAMP PULSE CIRCUIT AND VIDEO MUTE CIRCUIT 98
  2.4 ABL CIRCUIT 99

3. DEFLECTION CIRCUIT 100
  3.1 HORIZONTAL CIRCUIT 100
    3.1.1 +18V POWER SUPPLY 100
    3.1.2 HORIZONTAL OSCILLATOR CIRCUIT 100
    3.1.3 HORIZONTAL IMAGE POSITION COTROL CIRCUIT 102
    3.1.4 IMAGE DISTORTION CORRECTION CIRCUIT 105
    3.1.5 HORIZONTAL CIRCUIT SYSTEM SWITCHING COMPARATOR CIRCUIT 105
    3.1.6 HORIZONTAL DRIVE CIRCUIT 106
    3.1.7 HORIZONTAL SIZE CONTROL CIRCUIT 107
  3.2 HIGH VOLTAGE CIRCUIT 109
    3.2.1 HIGH VOLTAGE DRIVE CIRCUIT 109
    3.2.2 HIGH VOLTAGE OUTPUT CIRCUIT 110
    3.2.3 +B CONTROL CIRCUIT 110
    3.2.4 S-R CONTROL CIRCUIT 112
  3.3 VERTICAL CIRCUIT 113
    3.3.1 VERTICAL OSCILLATOR CIRCUIT 113
    3.3.2 VERTICAL POSITION CIRCUIT 114
    3.3.3 VERTICAL SIZE CIRCUIT 115
  3.4 BLANKING CIRCUIT 116
    3.4.1 HORIZONTAL BLANKING CIRCUIT 116
    3.4.2 VERTICAL BLANKING CIRCUIT 116
  3.5 PICTURE DISTORTION CORRECTION CIRCUIT 117
    3.5.1 SIDE PINCUSHION CIRCUIT 117
    3.5.2 PARALLEL DISTORTION CORRECTION CIRCUIT 119

4. FOCUS CIRCUIT 119

5. CPU CIRCUIT 121
  5.1 H-F/V FUNCTION 121
  5.2 V-F/V FUNCTION 121
  5.3 AUTOMATIC SIGNAL DISCRIMINATION FUNCTION 121
  5.4 USER CONTROL FUNTION 123
    5.4.1 USER LEVEL 1 123
    5.4.2 USER LEVEL 2 123
    5.4.3 USER LEVEL 3 123
  5.5 DATA MEMORY FUNCTION 125
  5.6 VARIOUS SWITCHING OUTPUT 125
    5.6.1 HORIZONTAL SYSTEM 125
    5.6.2 VERTICAL SYSTEM 125

6. SWITCHING REGULATOR UNIT 128
  6.1 RECTIFYING AND SMOOTHING CIRCUIT 128
  6.2.1 AUXILIARY POWER SUPPLY CIRCUIT (JC-2141UMA/JC-2142UMA) 128
  6.2.2 AUXILIARY POWER SUPPLY CIRCUIT (JC-2141UMB/B(EE)/R) 129
  6.3 CONVERTER CIRCUIT 129
  6.4 OUTPUT RECTIFYING AND SMOOTHING CIRCUIT 130
  6.5 ERROR DETECTION AMPLIFIER CIRCUIT 130
  6.6 OSCILLATING AND CONTROL CIRCUIT 131
  6.7 OVER VOLTAGE PROTECTION 131
  6.8 AUTO AND MANUAL DEGAUSSING CIRCUIT 132

1. Interface Circuit

1.1 Regulator

1.1.1 +12V Regulator

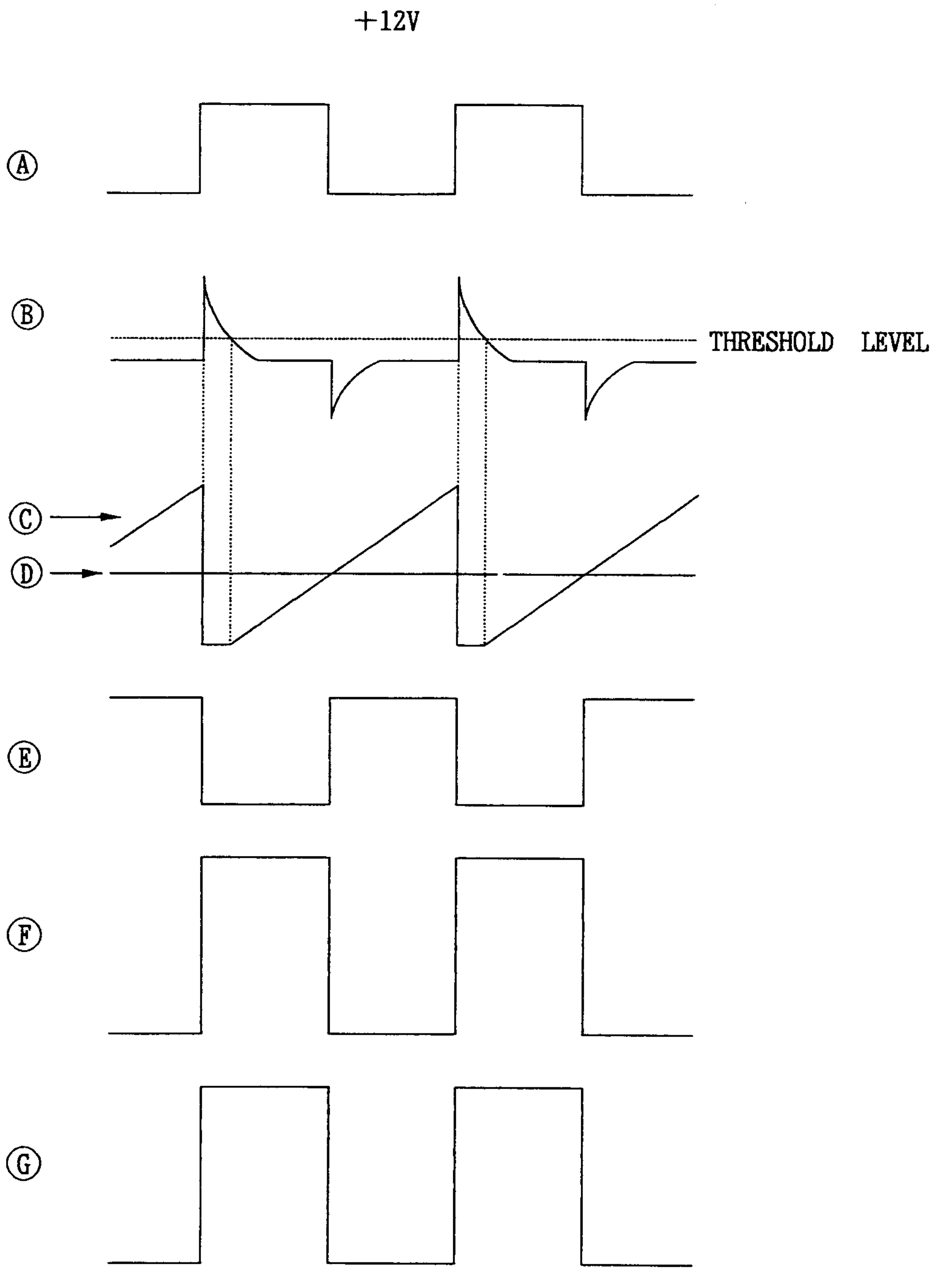
The horizontal oscillation pulse is fed to CN-X4 and differentiated by internal resistors of C8A1 and Q8A5 for switching Q8A5. A sawtooth wave is generated by discharging Q8A6 and applied to ICA82 pin 5. This voltage is compared with DC voltage at IC8A2 pin 6. A switching pulse is output to IC8A2 pin 7.
(The duty ratio of the switching pulse is determined by the DC level of pin 6 of IC8A2.)
The switching pulse is inverted by Q8A8 to switch Q8A9, and the $27V_{P-P}$ pulse is output to the source of Q8A9. The pulse of $27V_{P-P}$ is converted into DC by the smoothing circuit consisting of D8A7, T8A1, C8C1, C8C2, and L8A2.
The DC level is controlled by the error amplifier connected to pin 6 of IC8A2.
The error amplifier consists of VR8A1, IC8A1, other associated circuit. It controls the duty ratio of switching pulse.

1.1.2 −12V Regulator

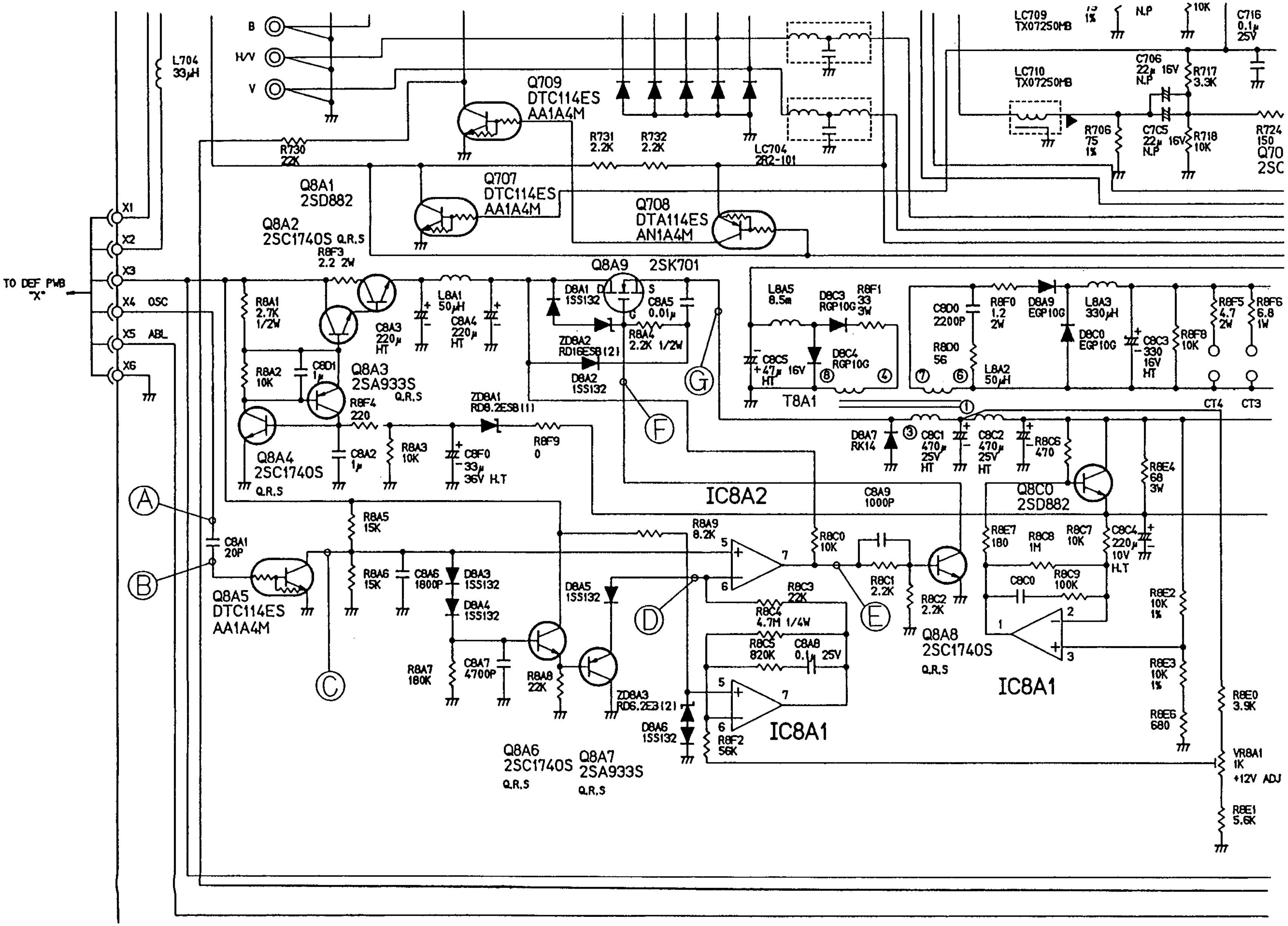
A pulse of $50V_{P-P}$ is taken out to the secondary side of T8A1 in the +12V regulator, and its negative voltage is converted into DC by the smoothing circuit of D8C4, L8A5, and C8C5.

1.1.3 +6V Regulator

The error amplifier controls the base of Q8C0 to about 6.6V and its emitter 6V.
When the 6V power line exceeds 8.2V the overvoltage protection circuit becomes operational, cutting off the 12V power supply.


+12V
Ⓐ
Ⓑ
THRESHOLD LEVEL
Ⓒ
Ⓓ
Ⓔ
Ⓕ
Ⓖ

(Fig. 1.1.a)

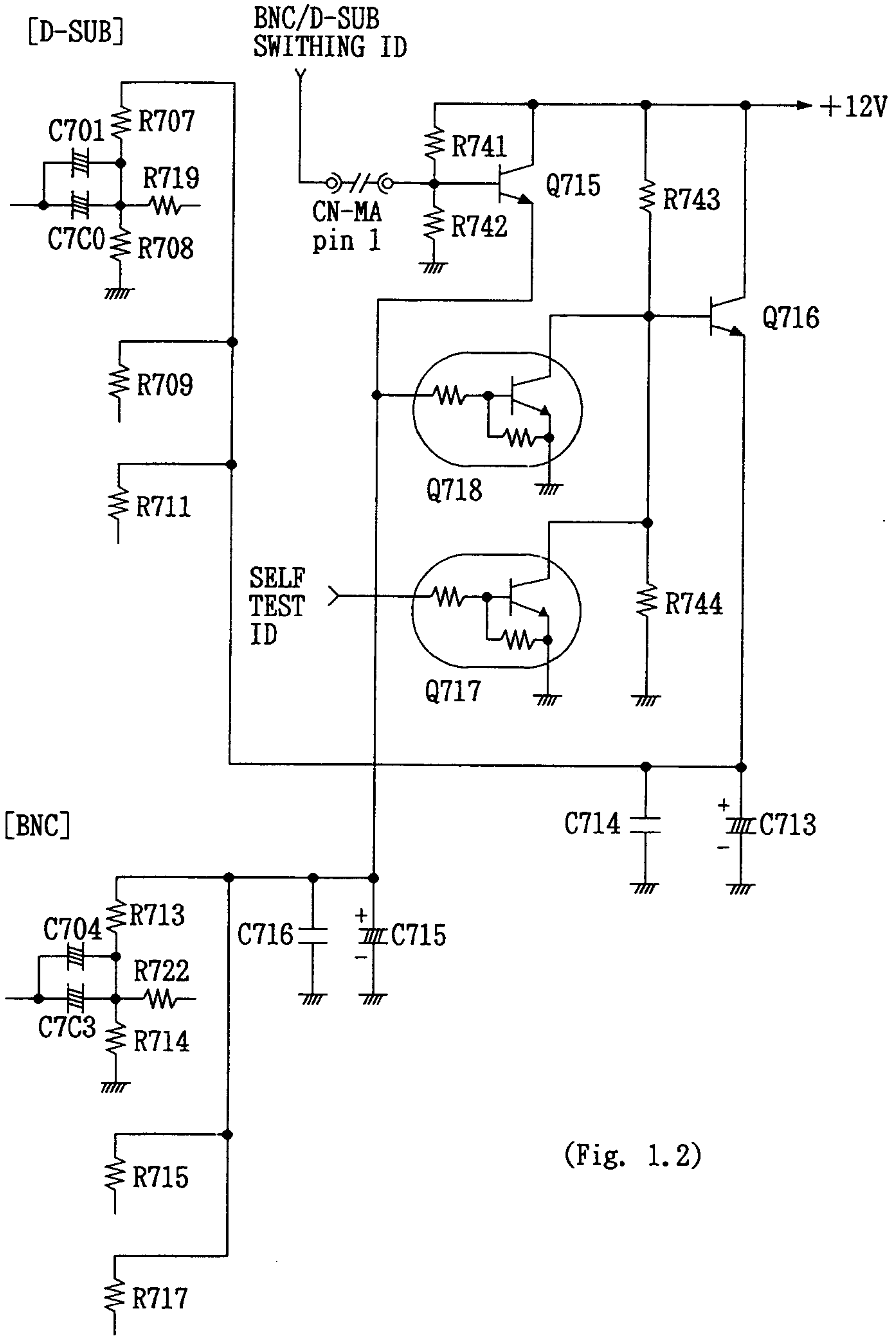

B
H/V
V
L704
33μH
Q709
DTC114ES
AA1A4M
R730
22K
R731
2.2K
R732
2.2K
LC704
2R2-101
LC709
TX07250MB
LC710
TX07250MB
N.P
10K
C716
0.1μ
25V
C706
22μ 16V
N.P
R717
3.3K
R706
75
1%
C7C5
22μ 16V
N.P
R718
10K
R724
150
Q70
2SC
Q8A1
2SD882
Q707
DTC114ES
AA1A4M
Q708
DTA114ES
AN1A4M
Q8A2
2SC1740S Q.R.S
R8F3
2.2 2W
TO DEF PWB
"X"
X1
X2
X3
X4 OSC
X5 ABL
X6
R8A1
2.7K
1/2W
C8A3
220μ
HT
L8A1
50μH
C8A4
220μ
HT
Q8A9 2SK701
D8A1
1SS132
D
S
G
C8A5
0.01μ
ZD8A2
RD16ESB(2)
R8A4
2.2K 1/2W
D8A2
1SS132
L8A5
8.5m
D8C3
RGP10G
R8F1
33
3W
C8C5
47μ 16V
HT
D8C4
RGP10G
⑧
④
T8A1
C8D0
2200P
R8F0
1.2
2W
D8A9
EGP10G
L8A3
330μH
D8C0
EGP10G
C8C3
330
16V
HT
R8F8
10K
R8F5
4.7
2W
R8F6
6.8
1W
R8D0
56
⑦
⑥
L8A2
50μH
CT4
CT3
①
R8A2
10K
C8D1
1μ
Q8A3
2SA933S
Q.R.S
R8F4
220
ZD8A1
RD8.2ESB(1)
R8F9
0
Ⓕ
Ⓖ
D8A7
RK14
③
C8C1
470μ
25V
HT
C8C2
470μ
25V
HT
R8C6
470
Q8A4
2SC1740S
Q.R.S
C8A2
1μ
R8A3
10K
C8F0
33μ
36V H.T
IC8A2
C8A9
1000P
Q8C0
2SD882
R8E4
68
3W
Ⓐ
Ⓑ
C8A1
20P
Q8A5
DTC114ES
AA1A4M
R8A5
15K
R8A6
15K
C8A6
1800P
D8A3
1SS132
D8A4
1SS132
R8A9
8.2K
D8A5
1SS132
Ⓓ
R8C0
10K
R8C1
2.2K
Ⓔ
R8C2
2.2K
Q8A8
2SC1740S
Q.R.S
R8E7
180
R8C8
1M
R8C7
10K
C8C4
220μ
10V
H.T
C8C0
R8C9
100K
IC8A1
R8E2
10K
1%
R8E3
10K
1%
R8E6
680
R8C3
22K
R8C4
4.7M 1/4W
R8C5
820K
C8A8
0.1μ 25V
Ⓒ
R8A7
180K
C8A7
4700P
R8A8
22K
ZD8A3
RD6.2E3(2)
D8A6
1SS132
R8F2
56K
IC8A1
R8E0
3.9K
VR8A1
1K
+12V ADJ
R8E1
5.6K
Q8A6
2SC1740S
Q.R.S
Q8A7
2SA933S
Q.R.S

(Fig. 1. 1. b)

1.2 BNC/D-SUB Switching Circuit

The switch over between BNC and D-SUB is made by the BNC/D-SUB switch mounted in the front panel.

When the switch is set to the BNC position, CN-MA pin 1 is placed into an open state, applying the bias to R713, R715, and R717 of the BNC-side input circuit to allow the video signal to go through them, At that time, Q716 does not come on because the base of Q718 is high. Therefore, the bias is not applied to the D-SUB side. When the switch is set to the D-SUB position, Q716 comes on with CN-MA pin 1 is grounded, thereby applying the bias to R707, R709, and R717 of the D-SUB side input circuit. In the self test, Q717 is turned on, to prevent the bias from being applied to either the BNC-side input circuit or the D-SUB side input circuit.


[D-SUB]
BNC/D-SUB
SWITHING ID
+12V
C701
R707
R719
C7C0
R708
R741
Q715
R743
CN-MA
pin 1
R742
Q716
R709
Q718
R711
SELF
TEST
ID
R744
Q717
[BNC]
C714
C713
C704
R713
C716
C715
R722
C7C3
R714
R715
R717

(Fig. 1.2)

1.3 Sync Interface Circuit

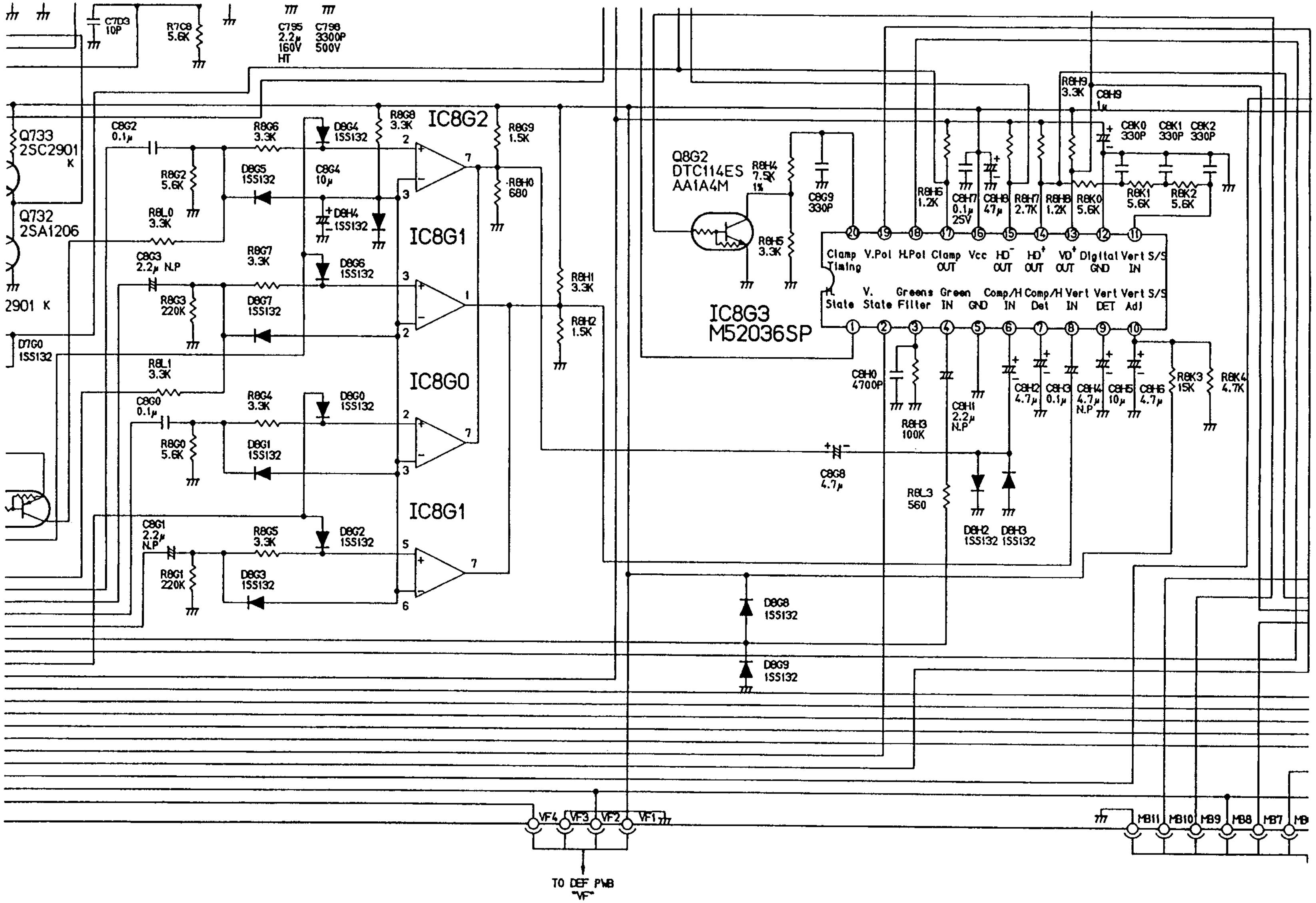
When D-SUB is input:

The horizontal sync signal is fed to pin 2 of IC8G2, and shaped at pin 7, and then output. The signal is made about 1.4V_{P-P} by D8H2 and D8H3 output to pin 6.
The vertical sync signal is fed to pin 3 of IC8G1, shaped at pin 1, and then output. This signal is fed to pin 8 of IC8G3.

When BNC is input:

The horizontal sync signal is fed to pin 2 of IC8G0, shaped at pin 7, and then output.This signal is fed to pin 6 of IC8G3, just as in the case of D-SUB.
The vertical sync signal is fed to pin 5 of IC8G1, shaped at pin 7, and then output. This signal is fed to pin 8 of IC8G3, just as in the case of the D-SUB.

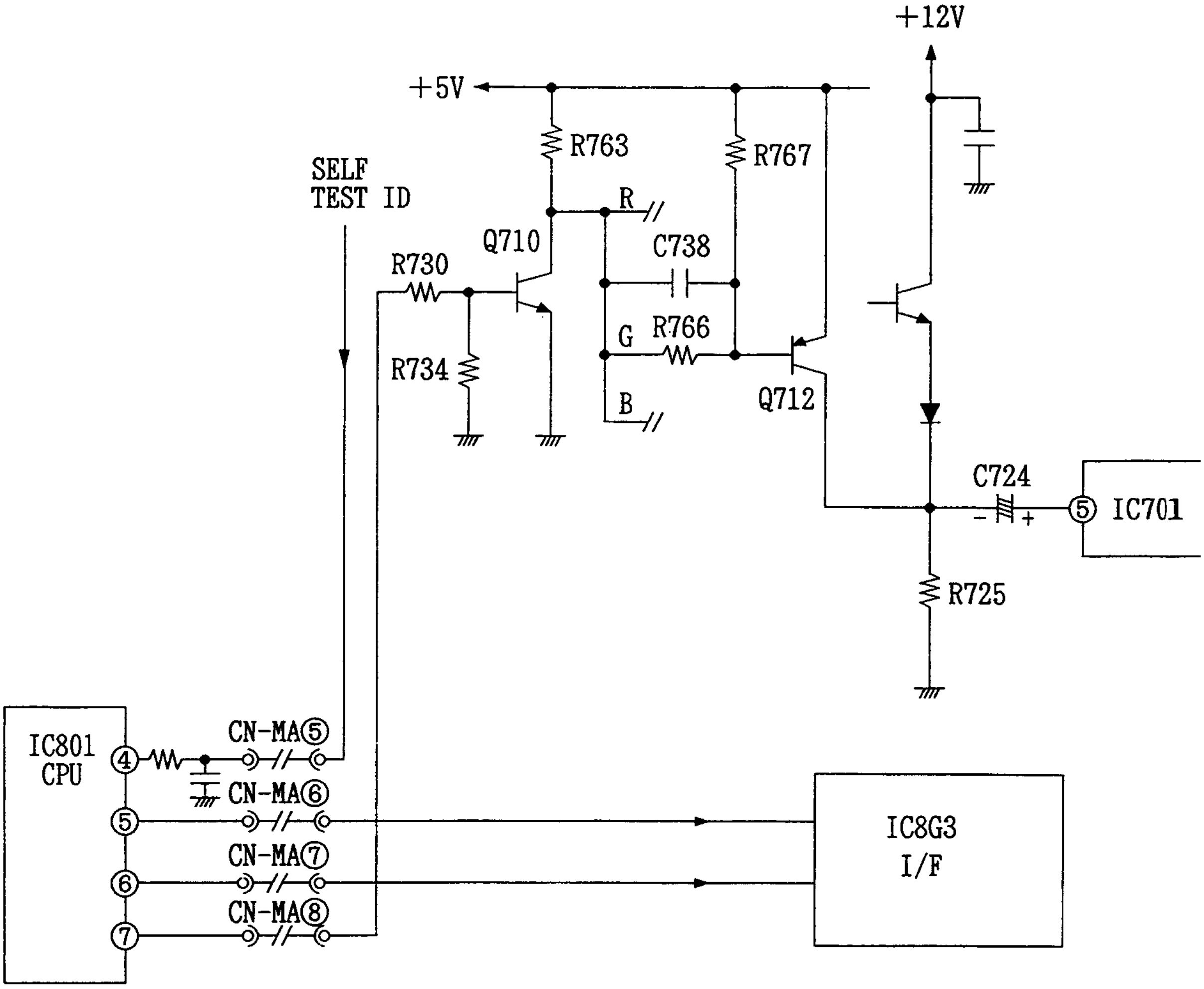
The composite sync is fed to pin 6 of IC8G3, just as in the case of the horizontal sync signal of BNC.
In the case of sync ON input, it is fed to pin 4 of IC8G3 from the video input circuit for both D-SUB and BNC.
The signal fed to IC8G3 is internally sync separated and waveform shaped. From pin 13, V Sync (Posi) is output at 12V_{P-P}, and from pin 14, H Sync (Posi), from pin 15, H Sync (Nega), and from pin 17, the clamp pulse (Posi) are output at 5V_{P-P}, respectively.
Also, when there is no H Sync input to pin 18, no V Sync at pin 19 and the polarity is positive the output is low. when the polarity is negative the output is high.


C7D3 10P
R7C8 5.6K
C795 2.2μ 160V HT
C798 3300P 500V
Q733 2SC2901 K
Q732 2SA1206
2901 K
D7G0 1SS132
C8G2 0.1μ
R8G2 5.6K
R8L0 3.3K
C8G3 2.2μ N.P
R8G3 220K
R8L1 3.3K
C8G0 0.1μ
R8G0 5.6K
C8G1 2.2μ N.P
R8G1 220K
R8G6 3.3K
D8G5 1SS132
R8G7 3.3K
D8G7 1SS132
R8G4 3.3K
D8G1 1SS132
R8G5 3.3K
D8G3 1SS132
D8G4 1SS132
C8G4 10μ
D8H4 1SS132
D8G6 1SS132
D8G0 1SS132
D8G2 1SS132
R8G8 3.3K
IC8G2
IC8G1
IC8G0
IC8G1
R8G9 1.5K
R8H0 680
R8H1 3.3K
R8H2 1.5K
Q8G2 DTC114ES AA1A4M
R8H4 7.5K 1%
R8H5 3.3K
C8G9 330P
IC8G3 M52036SP
Clamp Timing
V.Pol
H.Pol
Clamp OUT
Vcc
HD⁻ OUT
HD⁺ OUT
VD⁺ OUT
Digital GND
Vert S/S IN
V. State
State
Greens Filter
Green IN
Comp/H GND
Comp/H IN
Comp/H Det
Vert IN
Vert DET
Vert S/S Adj
R8H6 1.2K
C8H7 0.1μ 25V
C8H8 47μ
R8H7 2.7K
R8H8 1.2K
R8K0 5.6K
R8H9 3.3K
C8H9 1μ
C8K0 330P
C8K1 330P
C8K2 330P
R8K1 5.6K
R8K2 5.6K
C8H0 4700P
R8H3 100K
C8H1 2.2μ N.P
C8H2 4.7μ
C8H3 0.1μ
C8H4 4.7μ N.P
C8H5 10μ
C8H6 4.7μ
R8K3 15K
R8K4 4.7K
C8G8 4.7μ
R8L3 560
D8H2 1SS132
D8H3 1SS132
D8G8 1SS132
D8G9 1SS132
VF4
VF3
VF2
VF1
TO DEF PWB "VF"
MB11
MB10
MB9
MB8
MB7
MB

(Fig. 1. 3)

1.4 Self Test

When "BNC/D-SUB SELECT" switch is set to D-SUB and there is no cable connected to the D-SUB or mini D-SUB inputs of the monitor, then CN-MA pin 5 and IC 801 (CPU) pin 4 are high. Then H Sync (pin 5), V Sync (pin 6) and the video (pin 7) compose the CPU generated Self Test pattern.



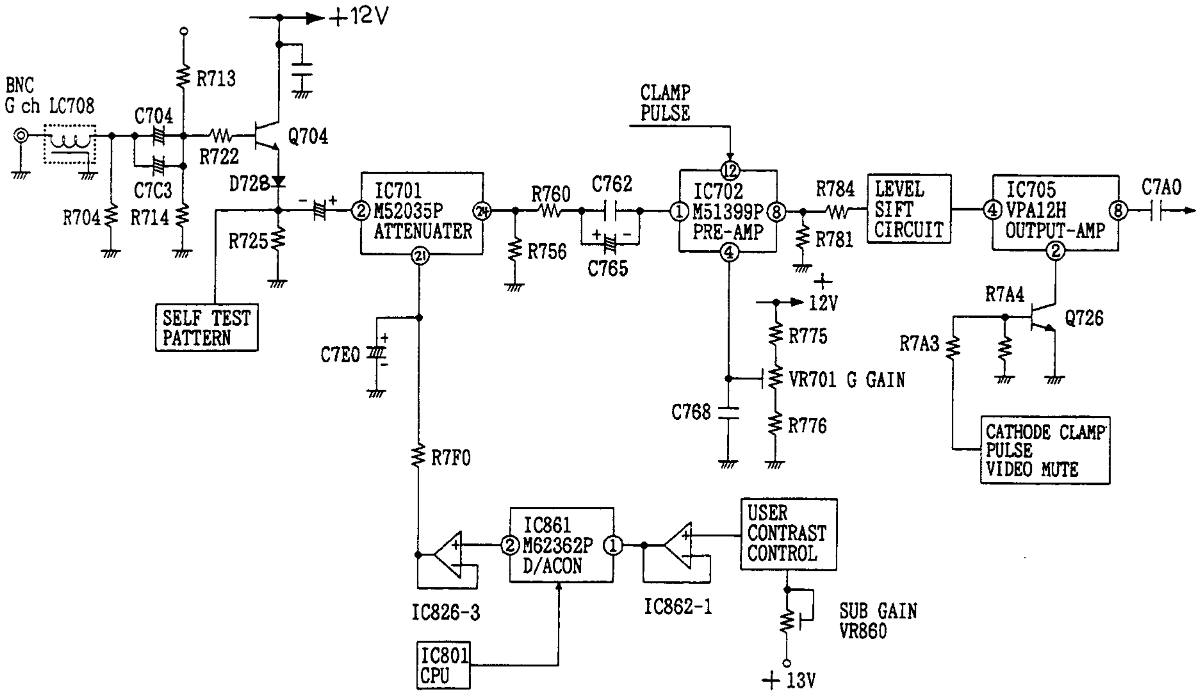
+12V
+5V
R763
R767
SELF
TEST ID
R
Q710
C738
R730
G
R766
R734
B
Q712
C724
⑤ IC701
R725
IC801
CPU
④
⑤
⑥
⑦
CN-MA⑤
CN-MA⑥
CN-MA⑦
CN-MA⑧
IC8G3
I/F

(Fig. 1.4)

2. Video Circuit

2.1 Video Signal Amplifier

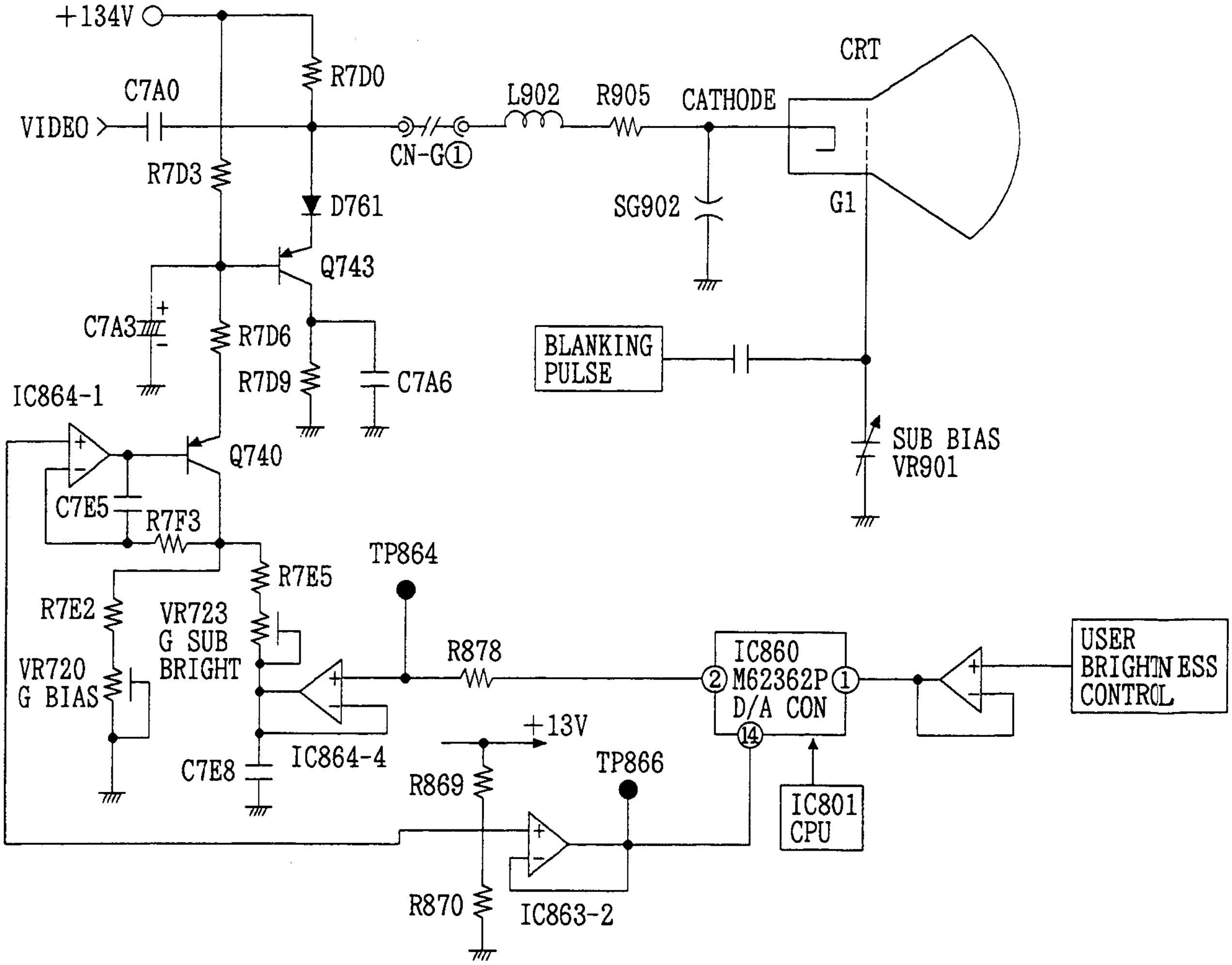
The three video circuits are the same for the each R/G/B color.
Therefore only the green video circuit will be explained here. The green video signal input is fed to the pin 2 of IC701 through Q704. The video signal is attenuated by IC701, and the attenuation level is controlled by the user CONTRAST CONTROL (VR101). The output signal of IC701 is supplied to IC702. The output signal of IC702 pin 8 is supplied to IC705. IC702 is preamplifier, and the gain is adjustable by the G GAIN VR701. IC705 is the output amplifier.


+12V
BNC
G ch LC708
R713
C704
R722
Q704
C7C3
D728
R704
R714
R725
SELF TEST PATTERN
IC701
② M52035P ㉔
ATTENUATER
㉑
R760
C762
R756
C765
C7E0
R7F0
CLAMP PULSE
⑫
IC702
① M51399P ⑧
PRE-AMP
④
R784
R781
12V
R775
VR701 G GAIN
C768
R776
LEVEL SIFT CIRCUIT
IC705
④ VPA12H ⑧
OUTPUT-AMP
②
C7A0
R7A4
Q726
R7A3
CATHODE CLAMP PULSE VIDEO MUTE
IC861
② M62362P ①
D/ACON
IC826-3
IC862-1
USER CONTRAST CONTROL
SUB GAIN VR860
+13V
IC801 CPU

(Fig. 2.1) BLOCK DIAGRAM of Video Signal Amplifier

2.2 Brightness and Cut-off Circuit

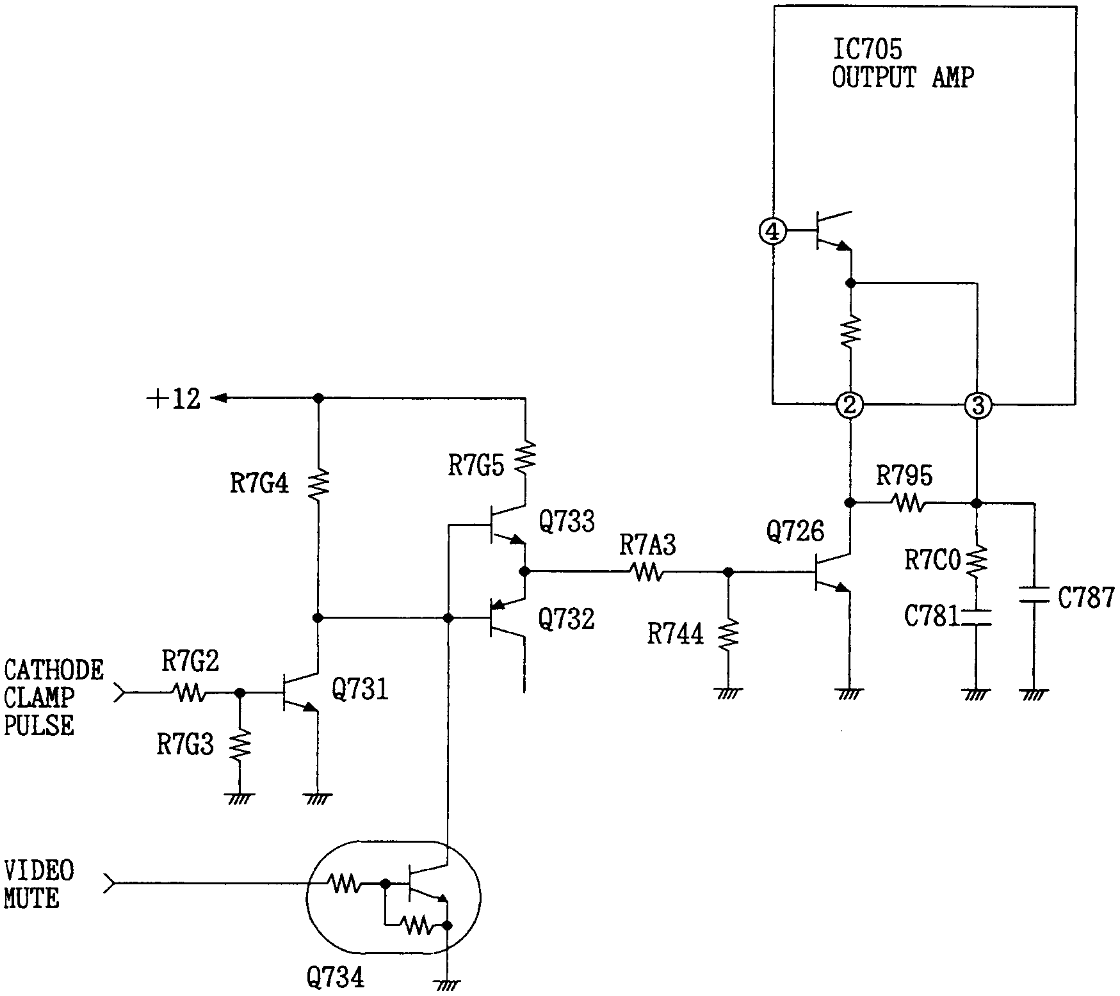
The raster brightness level is determined by clamping the video output level from IC705. The DC clamping level is determined by using the voltage drop of R7D3 (Which is basically determined by the current of Q740).
The raster brightness level is determined by the voltage at the output of IC864-4. When the voltage of Q740 emitter is same voltage as the output of IC864-4, the DC clamping level is at cut-off level.


+134V
C7A0
VIDEO
R7D0
R7D3
D761
CN-G①
L902
R905
CATHODE
CRT
G1
SG902
Q743
C7A3
R7D6
R7D9
C7A6
BLANKING PULSE
IC864-1
Q740
SUB BIAS
VR901
C7E5
R7F3
R7E5
TP864
R7E2
VR723
G SUB
BRIGHT
R878
IC860
M62362P
D/A CON
②
①
⑭
USER BRIGHTNESS CONTROL
VR720
G BIAS
C7E8
IC864-4
+13V
R869
TP866
IC801
CPU
R870
IC863-2

(Fig. 2.2) Brightness and Cut-off Circuit

2.3 Cathode Clamp Pulse Circuit and Video Mute Circuit

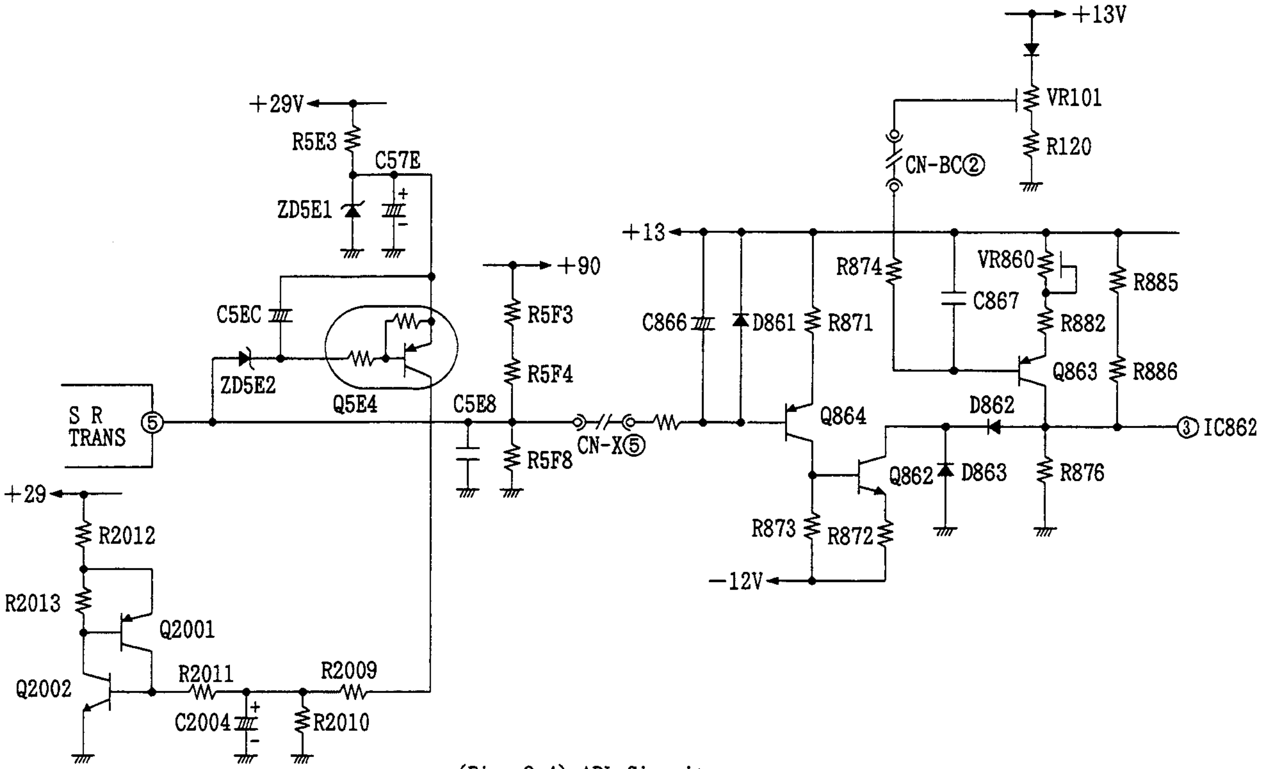
The cathode clamp pulse is applied to the push-pull circuit which is composed of Q732 and Q733 through the Q731. During the clamping period, this pulse turns on the and Q726 the video amplifier is at cut-off.
The video mute signal is generated at IC801 (CPU) pin 8 when input signal is changed. Q734 is turned on by the video mute signal from the CPU. Then Q726 is turned off and the video amplifier is cut-off during the time that the video mute signal is generated.


IC705
OUTPUT AMP
④
②
③
+12
R7G4
R7G5
Q733
R7A3
Q726
R795
R7C0
C787
C781
Q732
R744
CATHODE
CLAMP
PULSE
R7G2
Q731
R7G3
VIDEO
MUTE
Q734

(Fig. 2.3) Cathode Clamp Pulse and Video Mute Circuit

2.4 ABL Circuit

The maximum average current flowing through the CRT is controlled to under 500µA by limiting the video V_{P-P}. The voltage of CN-X pin 5 is clamped at 13.6V by D861 when the anode current is 500µA or less. If the anode current exceeds 500µA, the voltage of CN-X pin 5 drops to less than 13.6V due to the voltage drop of R5F3 and R5F4. This drives Q864 and Q862 to decrease the collector potential of Q862, and the gain of IC701 is decreased.


+29V
R5E3
C57E
ZD5E1
C5EC
ZD5E2
Q5E4
S R TRANS
⑤
+29
R2012
R2013
Q2001
Q2002
R2011
R2009
C2004
R2010
+90
R5F3
R5F4
C5E8
R5F8
CN-X⑤
+13
C866
D861
R871
Q864
R873
R872
-12V
Q862
D863
+13V
VR101
R120
CN-BC②
R874
C867
VR860
R882
Q863
R885
R886
D862
R876
③IC862

(Fig. 2.4) ABL Circuit

3. Deflection Circuit

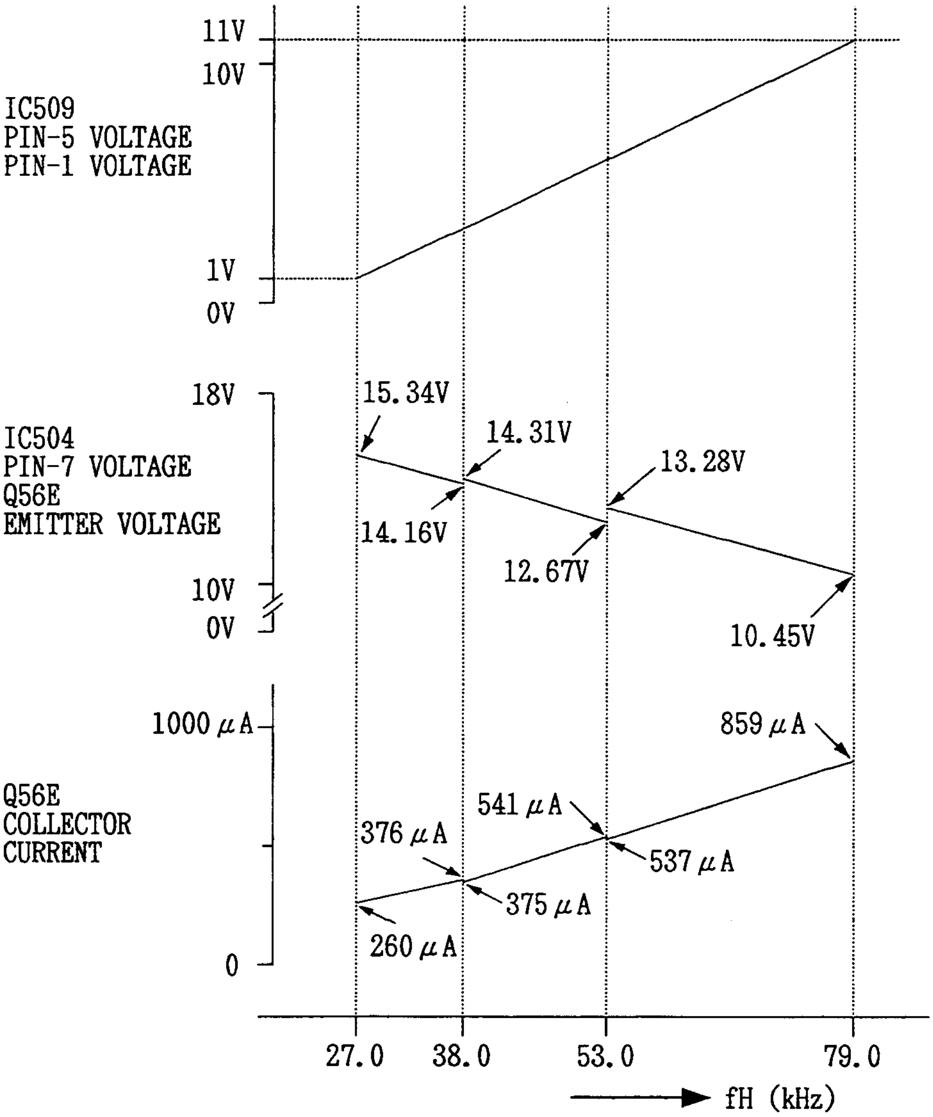
3.1 Horizontal Circuit

3.1.1 +18V Power Supply

This power supply is a series regulator consisting of Q461, Q462, ZD461, and its peripheral circuit. Its output is supplied to the horizontal oscillator circuit and the horizontal image position control circuit, etc.

3.1.2 Horizontal Oscillator Circuit

This oscillator circuit consists of a H-F/V delay circuit, an oscillator frequency control circuit (V/I) for converting the H-F/V output into the oscillator frequency control current, and a horizontal oscillation and sync circuit.
The H-F/V delay circuit consists of IC509 (pins 5, 6, and 7), R502, R503, C501, D501, and its peripheral circuit.
This circuit causes the change of the H-F/V voltage (microcomputer output) to be input to pin 5 of IC509 to be delayed by the time constants of R502, R503, and C501, and supplies it to each circuit via the voltage follower of IC509 (pins 1, 2, and 3).
The oscillator frequency control circuit consists of IC505, IC504 (pins 1, 2, 3, 5, 6, and 7), Q56E, and its peripheral circuits.
It adds the voltage of the H-F/V delay circuit output (pin 1 of IC509) and the DC bias of IC504 (pin 5) and converts them into the current necessary for the oscillation frequency control with IC504 (pins 1, 2, and 3) and Q56E.
The horizontal oscillation and sync circuit consists of IC501, C515, and its peripheral circuit.
This circuit makes oscillation of frequency nearly equal to the input signal frequency upon reception of control current (collector current of Q56E). It then compares the sync signal fed to pin 1 of IC501 with the phase of the horizontal output pulse fed to pin 4 and controls the frequency in such a way that the input signal is synchronized with the oscillation frequency on the AFC current of pin 7.
The horizontal output pulse at pin 12 of IC501 is supply to the horizontal drive circuit, etc.
For information on the input signal frequency VS each pin voltage and current of each section, refer to Fig. 3.1.2.


11V
10V
IC509
PIN-5 VOLTAGE
PIN-1 VOLTAGE
1V
0V
18V
IC504
PIN-7 VOLTAGE
Q56E
EMITTER VOLTAGE
10V
0V
15.34V
14.31V
13.28V
14.16V
12.67V
10.45V
1000 μA
Q56E
COLLECTOR
CURRENT
0
859 μA
541 μA
376 μA
537 μA
375 μA
260 μA
27.0
38.0
53.0
79.0
fH (kHz)

(Fig. 3.1.2)

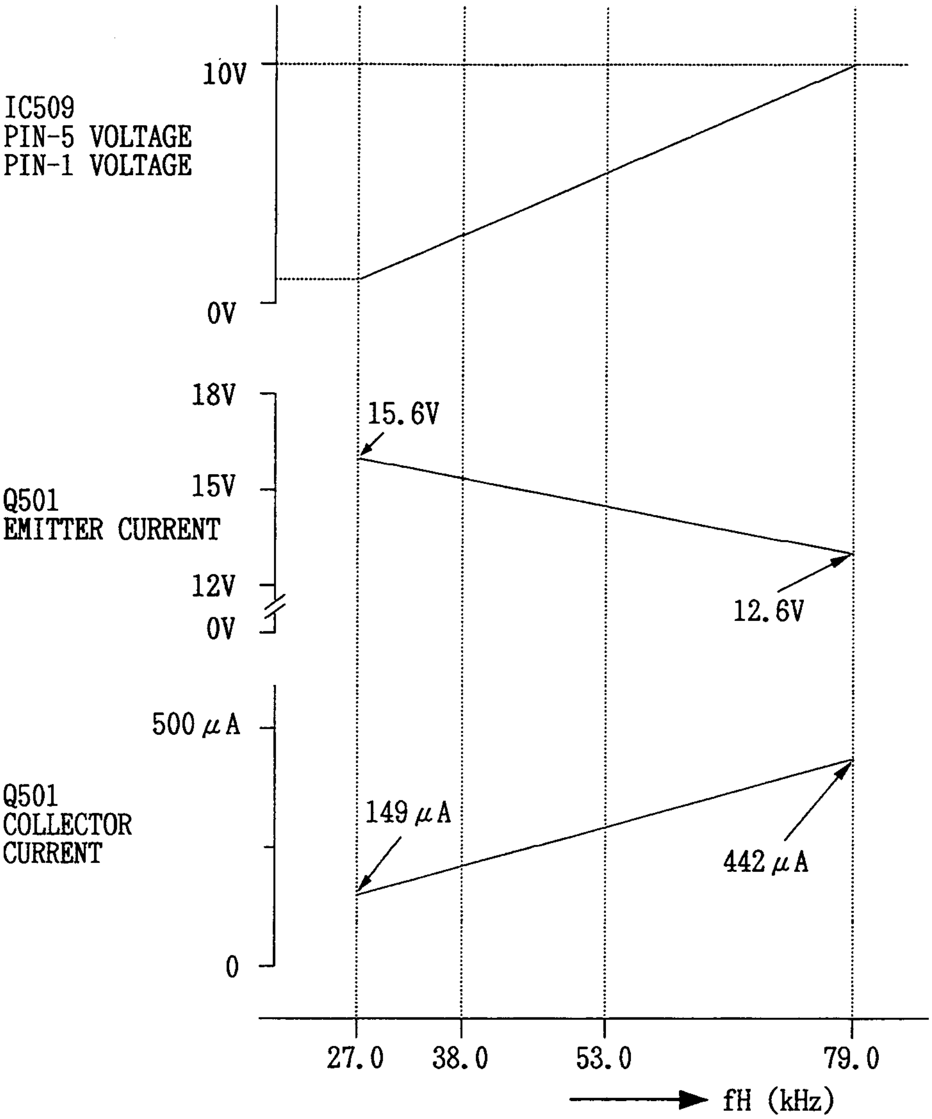
3.1.3 Horizontal Image Position Control Circuit

This control circuit controls the image position by varying the delay time of the input sync signal and the AFC comparison quasi sync signal.
It consists of a delay time control circuit for converting the H-F/V output voltage into delay time control current, a delay time control and sync regenerator circuit.
The delay time control circuit consists of IC504 (pins 12, 13, and 14), Q501, and its peripheral circuits. It adds the H-F/V delay circuit output (pin 1 of IC509) voltage and IC504 pin 12 voltage and converts them into the current (Q501 collector current) proportional to the input signal frequency.
The delay time control and sync regenerator circuit consists of Q502, C502, IC502, and IC503, and its peripheral circuits.
When a negative pulse (sync signal) is applied to pin 1 of IC502, the pin 4 voltage is made low in level, and Q502 is turned off. As the pin 15 time constant terminal is connected to GND via R50M this low level state is held. When Q502 is turned off, C502 is charged by the collector current of Q501. When the charge voltage (pin 3 of IC503) of C502 is brought high by the delay time control voltage (pin 2 of IC503), pin 7 of IC503 (IC502 pin 3 CLR terminal) is rendered low. Because IC502 is cleared, pin 4 is made high, Q502 is turned on, and the electric charge of C502 is discharged, causing pin 7 of IC503 to go high. With the positive trigger of IC502 pin 10 (pin 4 output), the negative pulse of the width (≒ 0.15μS) as determined by R520 and C506 is output from pin 12 as a quasi sync signal and supplied to pin 1 of IC501.
The delay time is equal to the time at which pin 4 of IC502 is brought low and given by the following formula.

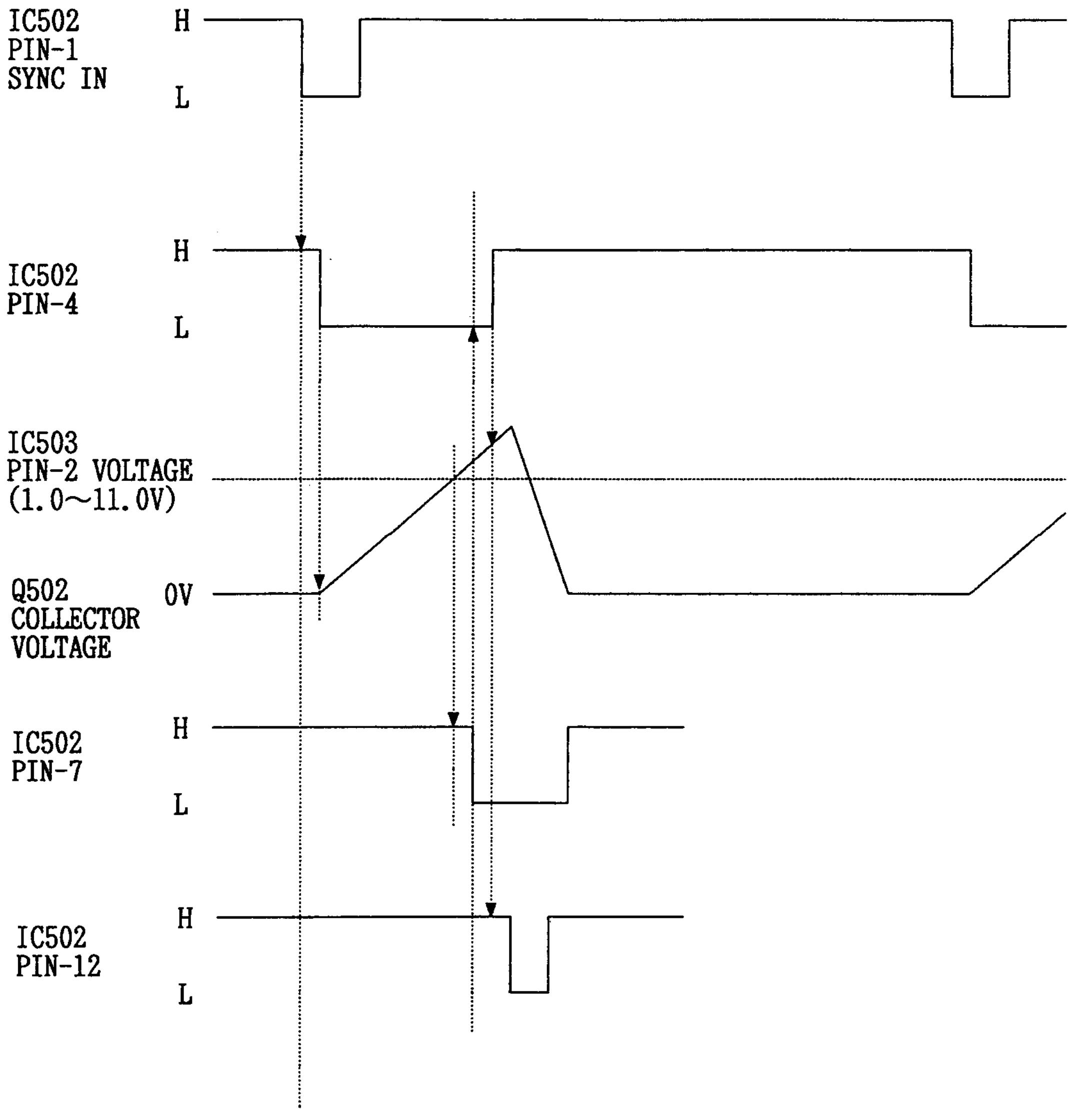
$$T = V * C/I$$

T: Delay time
V: Delay time control voltage (IC503 pin 2)
C: C502 capacitance
I: Delay time control current (Q501 collector current)

The delay time control current I is proportional to the input signal frequency. The delay time T is proportinal to the horizontal cycle. Therefore, the control range on the screen is held constant regardless of input signal frequency.
For information about the input signal frequency VS each section's terminal voltage and current refer to Fig. 3.1.3.a.
For the operation waveform of each section, refer to Fig. 3.1.3.b.


10V
IC509
PIN-5 VOLTAGE
PIN-1 VOLTAGE
0V
18V
15.6V
15V
Q501
EMITTER CURRENT
12V
0V
12.6V
500 μA
Q501
COLLECTOR
CURRENT
149 μA
442 μA
0
27.0
38.0
53.0
79.0
fH (kHz)

(Fig. 3.1.3.a)


IC502
PIN-1
SYNC IN
H
L
IC502
PIN-4
H
L
IC503
PIN-2 VOLTAGE
(1.0~11.0V)
Q502
COLLECTOR
VOLTAGE
0V
IC502
PIN-7
H
L
IC502
PIN-12
H
L

(Fig. 3.1.3.b)

3.1.4 Image Distortion Correction Circuit

This circuit adds the vertical cycle sawtooth, the side pin correction parabolic wave and the microcomputer generated image distortion correction voltage to the delay time control voltage.
The sawtooth wave and parabolic wave adder circuit consists of IC506 and its peripheral circuits. It adds the sawtooth wave and parabolic wave supplied via R5Y5 and R5X5 with IC506 and its peripheral circuit to produce an image distortion correction waveform. It then attenuates the waveform to a peak-to-peak wave value suited for addition of the waveform to the delay time control voltage.
The circuit for adding the image distortion correction wave to the delay time control voltage consists of IC504 (pins 8, 9, and 10) and its peripheral circuit. The image distortion correction waveform (IC504 pin 1 output) is supplied to IC504 (pin 10) via C5X3 and added to the delay time control voltage from the microcomputer supplied via R5Y1. This added voltage is supplied to the horizontal image position control circuit (IC503 pin 2).

3.1.5 Horizontal Circuit System Switching Comparator Circuit

This comparator consists of Q50A, Q51A, Q52A, Q53A, Q54A, Q55A, Q58A, IC510, IC511, and peripheral circuit. The description of the comparator for fH = 30 kHz will be given below as a typical comparator used.

High frequency input signal change description:

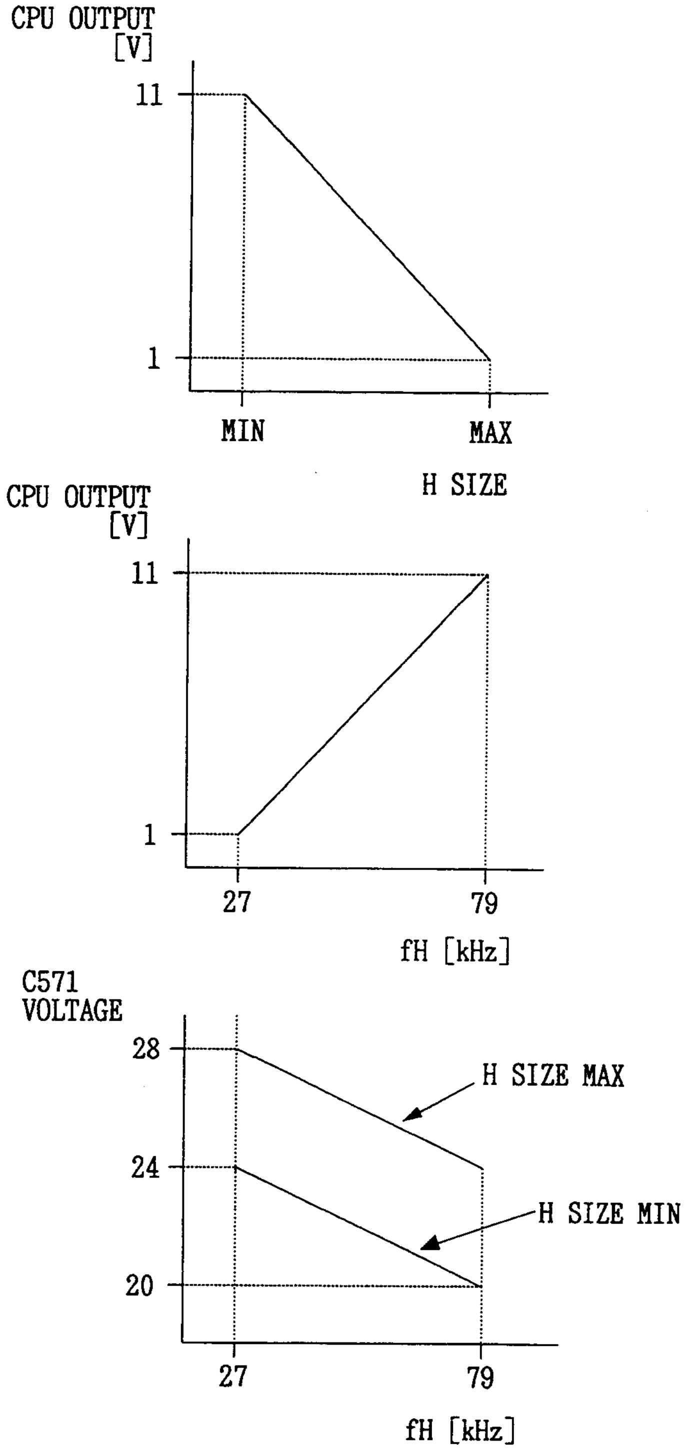
When the input signal is fH < 30 kHz, the base of Q58A is low and therefore it is off. Because the voltage at pin 7 of IC510 is higher than the voltage at pin 6 (H-F/V), pin 1 remains constant at about 16V.
When the input signal fH > 30 kHz, the base of Q58A is made high and therefore turned on. Now, pin 7's voltage is about 0.3V lower than the switching level (equivalent to fH—30kHz).
Pin 6's voltage is gradually increased by the H-F/V delay circuit.
When pin 6's voltage exceeds pin 7's, pin 1 drops to 0V, thereby stabilizing pin 7's voltage.
Now, this voltage is placed in the stable state.

Low frequency input signal change description:

When the input signal is fH > 30 kHz, Q58A is on because its base is high. The IC510 pin 7 voltage is lower than the pin 6 (H-F/V) voltage, pin 1 becomes about 0V and therefore in stable state.
When the input signal becomes fH < 30 kHz, the base of Q58A is forced low and Q58A is turned on. Pin 7's voltage is 0.3V higher than the switching level (equivalent, fH=30kHz). Pin 6's voltage is gradually reduced by the H-F/V delay circuit. When pin 6's voltage drops below that of pin 7, pin 1's voltage becomes 16V, thereby stabilizing pin 7's voltage.

3.1.6 Horizontal Drive Circuit

The horizontal pre-drive pulse at IC501 pin 12, and Q574 is turned on and off. Then it is amplified by T571 to turn on Q581 (horizontal output transistor). This horizontal drive is set so that the voltage of C571 is controlled to the optimum value by the horizontal size and the horizontal frequency.



(Fig. 3.1.6)

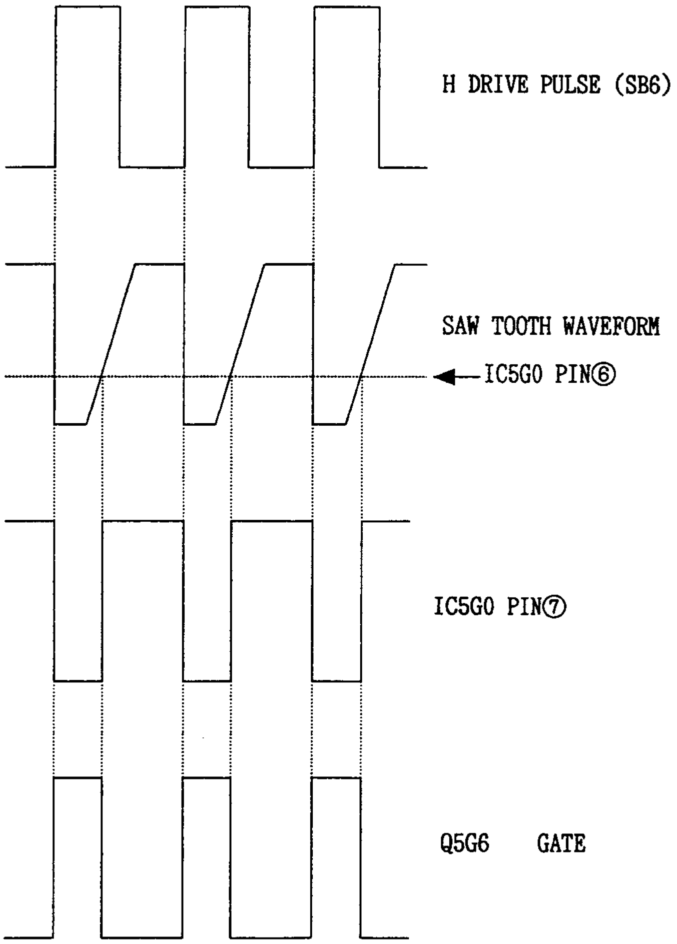
3.1.7 Horizontal Size Control Circuit

The horizontal video image is manipulated by the user control (set using 1280× 1024, 78.8kHz/70Hz and SW109 MAX). It is controlled to 316 mm by VR590. Also, the horizontal video size is designed to scan the front bezel fully (316 mm) at all the preset timing, except Mac II when the H SIZE of user control is set to the MAX position. The horizontal video size is stored with the specified size at each preset timing.
The horizontal deflection voltage controls 175V to be supplied from the power supply unit based on the PWM with the H SIZE and H F/V signals. This voltage is subjected to DC-DC conversion, supplied to T581, and then stepped up for use. The H SIZE control consists of the following circuits:

Sawtooth Wave Generator
Switching Pulse Generator
Switching FET Drive Circuit
Duty Cycle Controller

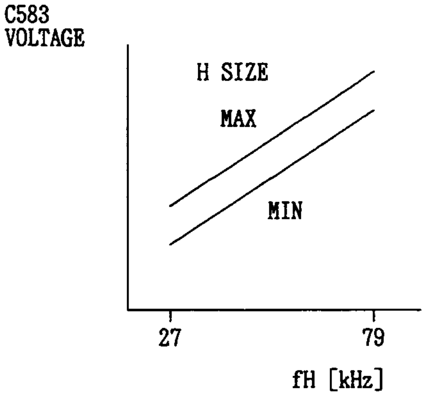
The sawtooth generator is formed by Q5G0, C5G2, Q5G1, R5G2, ZD5G0, R5G1, and ZD5G1. Q5G0 is switched by the differentiated H OSC pulse. Therefore, the sawtooth wave synchronized to H OSC frequency. The square wave is generated at IC5G0 pin 7, is inverted by transformer T5G0, and input to gate of FET Q5G6.
The square wave is generated at FET Q5G6's source : 175V_{P-P} is changed to DC level voltage by smoothing circuit compose of L5G1, C5H9, L5G2, and C583.

This DC voltage is used as a power source.


H DRIVE PULSE (SB6)
SAW TOOTH WAVEFORM
IC5G0 PIN⑥
IC5G0 PIN⑦
Q5G6 GATE

(Fig. 3.1.7.a)

The threshold voltage of pin 6 of IC5G0 which determines the ON-OFF duty of Q5G6 is controlled by the DC voltage of SB3 (H SIZE) and SB4 (H-F/V).



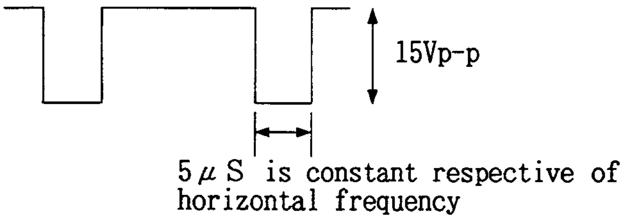
(Fig.3.1.7.b)

The horizontal video size changes up to 85% when the maximum size is made 100%.

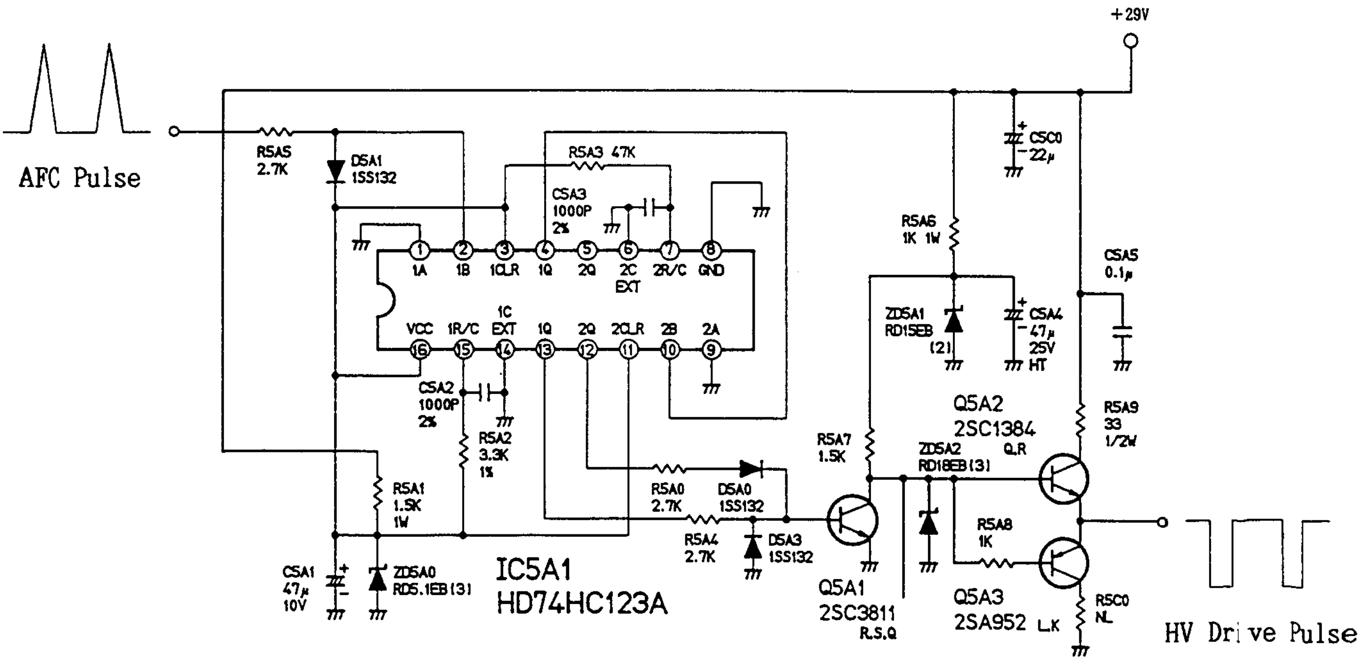
3.2 High Voltage Circuit

3.2.1 High Voltage Drive Circuit

The high voltage drive circuit consists of IC5A1 (monostable multivibrator), Q5A1, Q5A2, and Q5A3.
This circuit receives an AFC pulse from the horizontal output transformer and generates a high voltage drive pulse which ensures the OFF period such as shown below by using the monostable multivibrator.
The high voltage drive pulse is fed to the gate of Q5A4 and Q5A5 FET through the push-pull stage of Q5A2 and Q5A3.


15Vp-p
5μS is constant respective of horizontal frequency

(Fig. 3.2.1.a)


AFC Pulse
R5A5
2.7K
D5A1
1SS132
R5A3 47K
C5A3
1000P
2%
1A
1B
1CLR
1Q
2Q
2C EXT
2R/C
GND
VCC
1R/C
1C EXT
1Q
2Q
2CLR
2B
2A
C5A2
1000P
2%
R5A2
3.3K
1%
R5A1
1.5K
1W
C5A1
47μ
10V
ZD5A0
RD5.1EB(3)
IC5A1
HD74HC123A
R5A0
2.7K
D5A0
1SS132
R5A4
2.7K
D5A3
1SS132
+29V
C5C0
22μ
R5A6
1K 1W
ZD5A1
RD15EB
(2)
C5A4
47μ
25V
HT
C5A5
0.1μ
R5A7
1.5K
Q5A2
2SC1384
Q.R
ZD5A2
RD18EB(3)
R5A9
33
1/2W
R5A8
1K
Q5A1
2SC3811
R.S.Q
Q5A3
2SA952 L.K
R5C0
NL
HV Drive Pulse

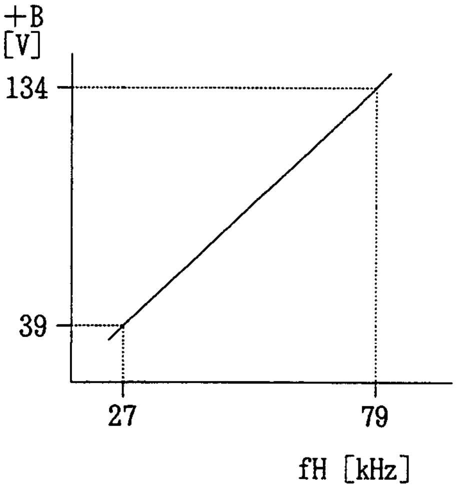
(Fig. 3. 2. 1)

3.2.2 High Voltage Output Circuit

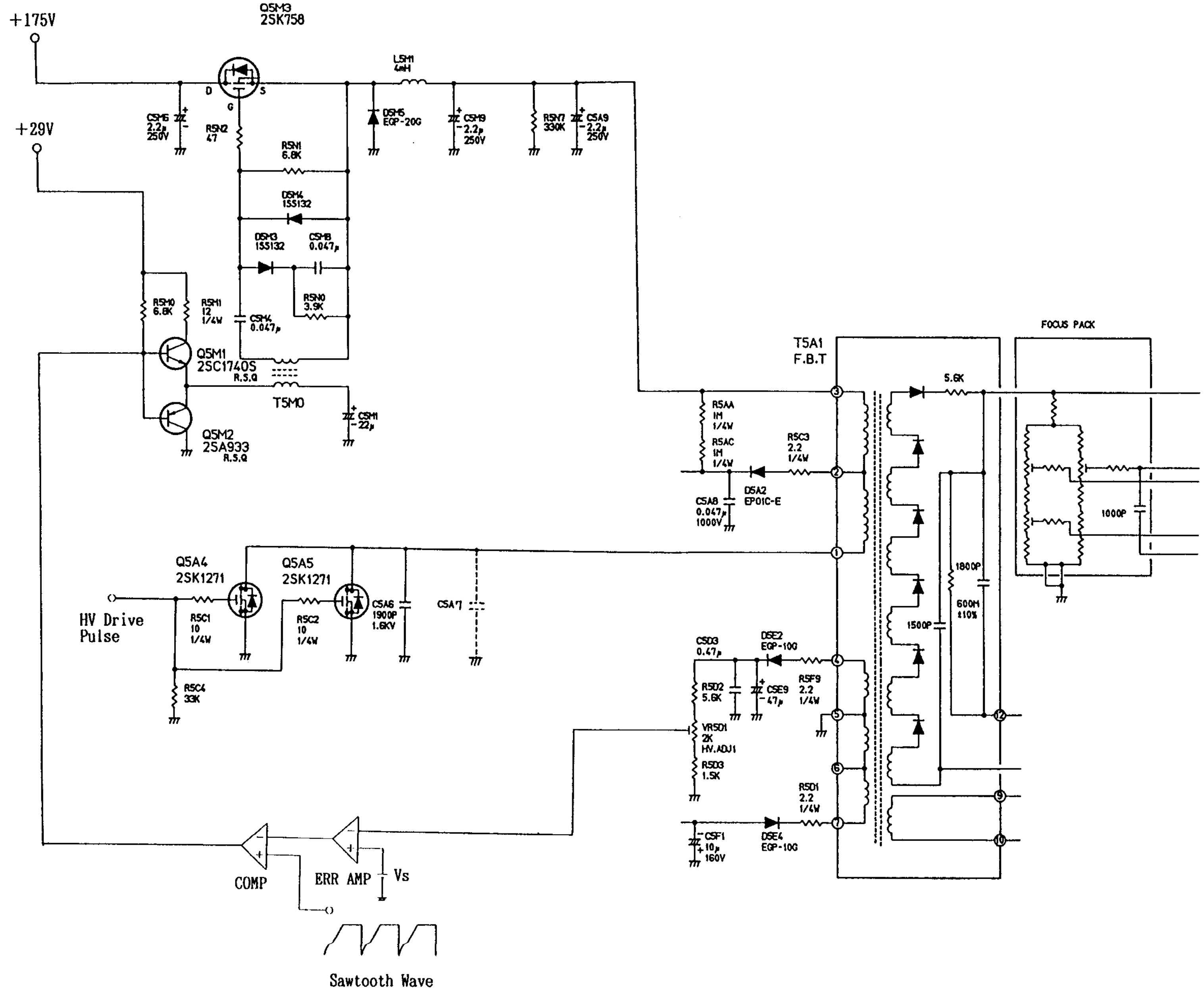
To obtain regulated high voltage, the high voltage output circuit consists of two circuit. One is a circuit for controlling T5A1 (FBT) input voltage (+B) for the horizontal frequency and regulates high voltage.
The other controls S-R transformer output voltage for the CRT anode current and regulates the high voltage.

3.2.3 +B Control Circuit

This circuit detects high voltage based on the tertiary winding of T5A1(FBT) and controls the DC/DC converter (Q5M3, Q5M5, L5M1, and C5M8) for keeping the high voltage remains constant despite of a horizontal frequency change. The control amount (high voltage) can be varied by VR5D1.
Relations between the horizontal frequency and the +B are as indicated below:



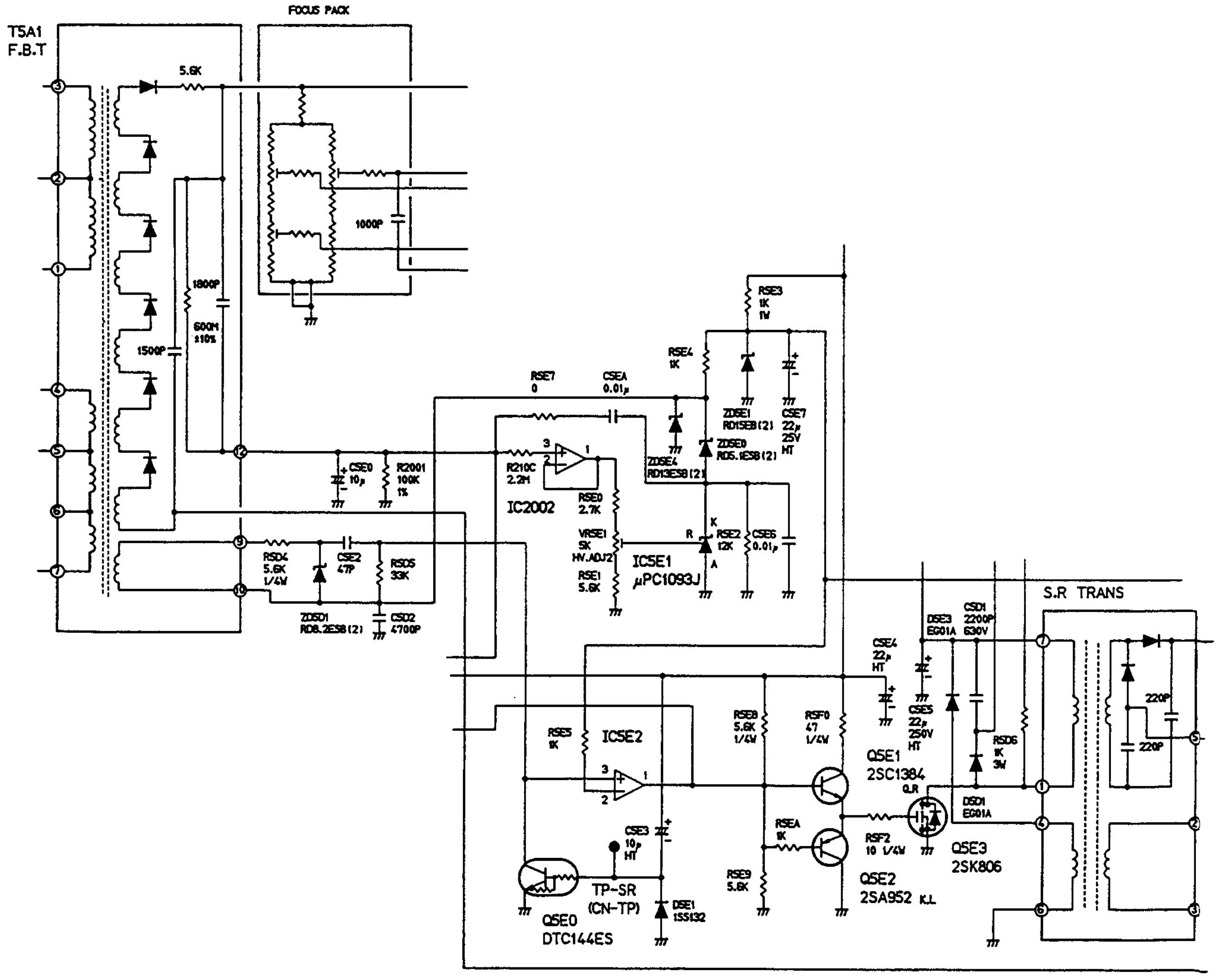
(Fig. 3.2.3.a)


+175V
+29V
Q5M3
2SK758
D
S
G
C5M6
2.2μ
250V
R5N2
47
L5M1
4mH
D5M5
EGP-20G
C5M9
2.2μ
250V
R5N7
330K
C5A9
2.2μ
250V
R5N1
6.8K
D5M4
1SS132
D5M3
1SS132
C5M8
0.047μ
R5N0
3.9K
R5M0
6.8K
R5M1
12
1/4W
C5M4
0.047μ
Q5M1
2SC1740S
R.S.Q
T5M0
C5M1
22μ
Q5M2
2SA933
R.S.Q
T5A1
F.B.T
FOCUS PACK
5.6K
R5AA
1M
1/4W
R5AC
1M
1/4W
R5C3
2.2
1/4W
C5A8
0.047μ
1000V
D5A2
EP01C-E
1000P
1800P
600M
±10%
1500P
Q5A4
2SK1271
Q5A5
2SK1271
HV Drive
Pulse
R5C1
10
1/4W
R5C2
10
1/4W
C5A6
1900P
1.6KV
C5A7
R5C4
33K
C5D3
0.47μ
D5E2
EGP-10G
R5D2
5.6K
C5E9
47μ
R5F9
2.2
1/4W
VR5D1
2K
HV.ADJ1
R5D3
1.5K
R5D1
2.2
1/4W
C5F1
10μ
160V
D5E4
EGP-10G
3
2
1
4
5
6
7
12
9
10
COMP
ERR AMP
Vs
Sawtooth Wave

(Fig. 3. 2. 3. b)

3.2.4 S-R Control Circuit

This circuit detects high voltage with the bleeder resistor of T5A1 (FBT) and the detection resistor R2001 and controls the pulse width which drives the S-R transformer based on this detection voltage, and keeps the high voltage constant in spite of a change in CRT anode current.
The control amount (high voltage) can be varied by VR5E1.

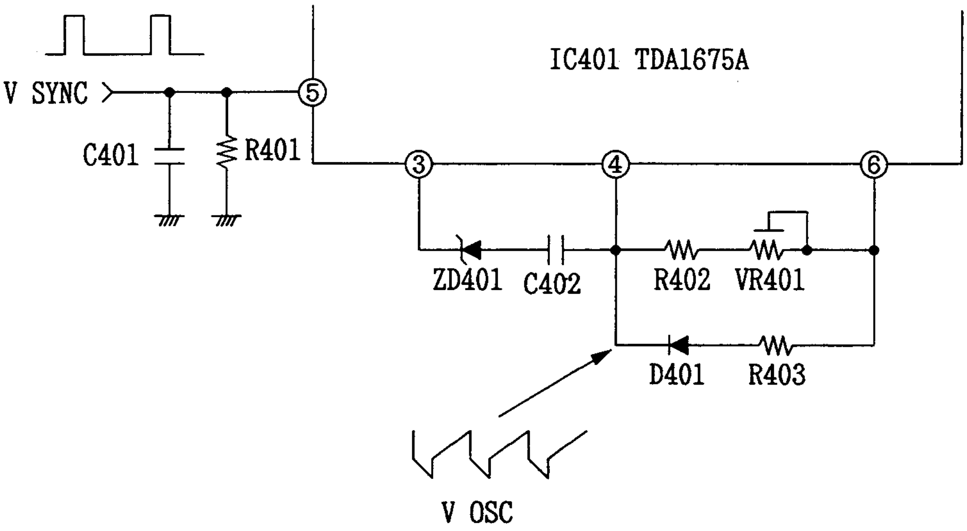

FOCUS PACK
T5A1
F.B.T
5.6K
1000P
1800P
600M
±10%
1500P
CSE0
10μ
R2001
100K
1%
RSD4
5.6K
1/4W
CSE2
47P
RSD5
33K
ZDSD1
RD8.2ESB(2)
CSD2
4700P
RSE7
0
CSEA
0.01μ
RSE3
1K
1W
RSE4
1K
ZDSE1
RD15EB(2)
CSE7
22μ
25V
HT
ZDSE0
RD5.1ESB(2)
ZDSE4
RD13ESB(2)
R210C
2.2M
IC2002
RSE0
2.7K
VRSE1
5K
HV.ADJ2
RSE1
5.6K
IC5E1
μPC1093J
K
R
A
RSE2
12K
CSE6
0.01μ
S.R TRANS
CSD1
2200P
630V
DSE3
EG01A
CSE4
22μ
HT
CSE5
22μ
250V
HT
RSD6
1K
3W
220P
220P
RSE5
1K
IC5E2
RSE8
5.6K
1/4W
RSF0
47
1/4W
Q5E1
2SC1384
Q.R
DSD1
EG01A
RSEA
1K
RSF2
10 1/4W
Q5E3
2SK806
CSE3
10μ
HT
TP-SR
(CN-TP)
DSE1
1SS132
RSE9
5.6K
Q5E2
2SA952 K.L
Q5E0
DTC144ES

(Fig. 3. 2. 4)

3.3 Vertical Circuit

3.3.1 Vertical Oscillator Circuit

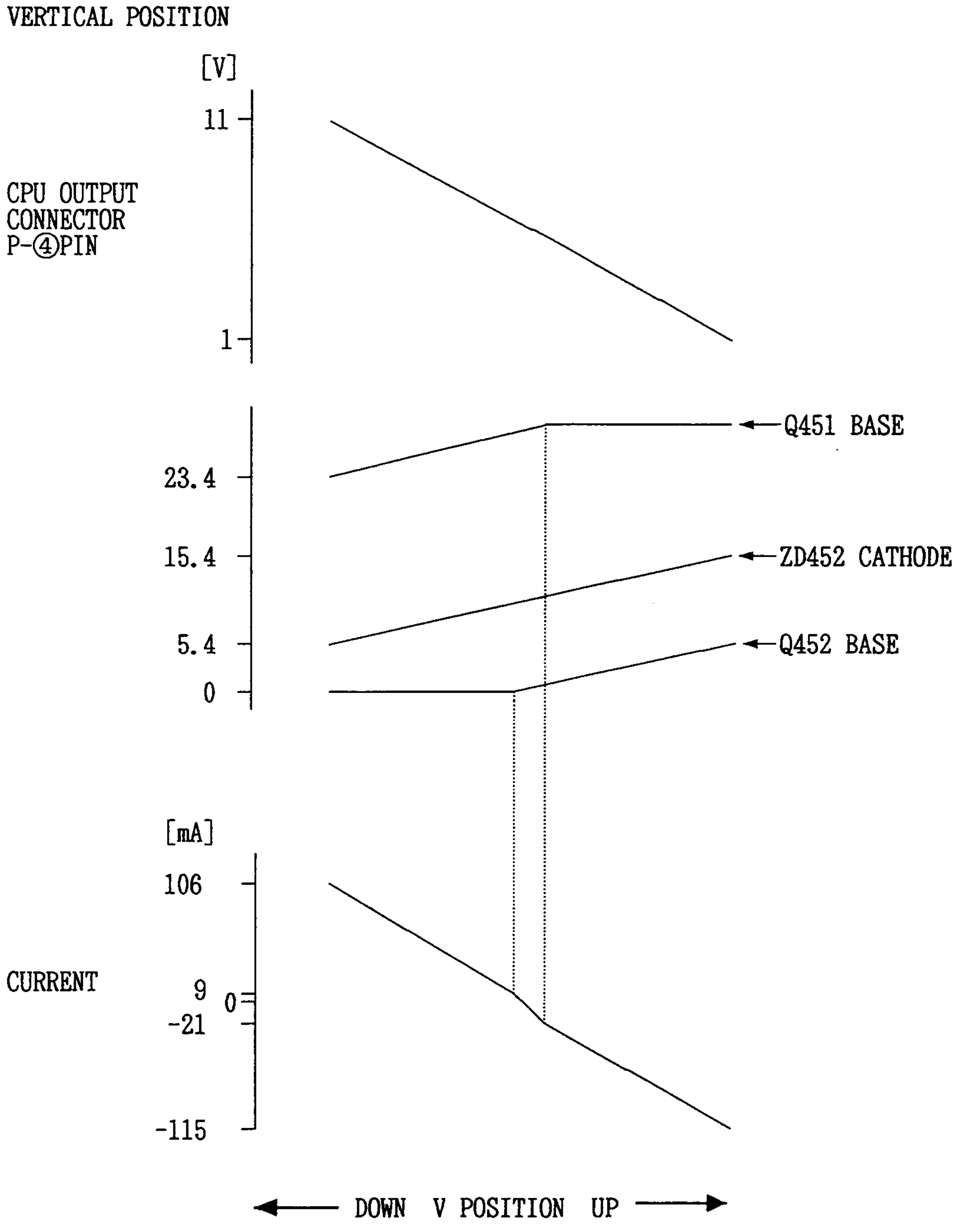
A positive sync signal at IC401 pin 5 will cause a sawtooth wave output at pin 3. When vertical deflection frequency f_V is 40 ~ 90 Hz, the 40 ~ 90Hz sync is automatic. When the sync signal is not present, oscillation is made at the frequency f_0 determined by C402, R402, R403, and VR401 to make f_0 = 40 Hz with VR401.


IC401 TDA1675A
V SYNC
C401
R401
⑤
③
④
⑥
ZD401
C402
R402
VR401
D401
R403
V OSC

(Fig. 3.3.1)

3.3.2 Vertical Position Circuit

Explanation: the CPU PWB outputs the DC V Position signal as shown in Fig. 3.3.2. The CPU generates DC signal and the DC reference signal (= 8.2 V) at IC402 pin 12. This voltage is amplified by the differrential amplifier comprised of the OP-AMP (IC402), R452, and R453. Therefore, each DC voltage changes as shown in Fig. 3.3.2. As a result, the value of DC current through the vertical deflection yoke changes as shown in Fig. 3.3.2 as the vertical position moves up or down.

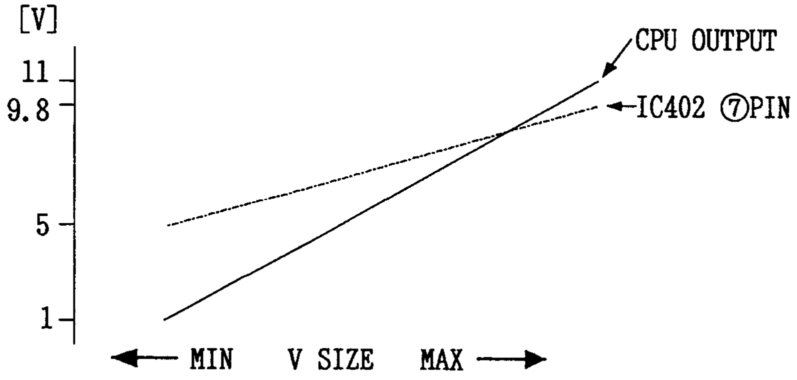


(Fig. 3.3.2)

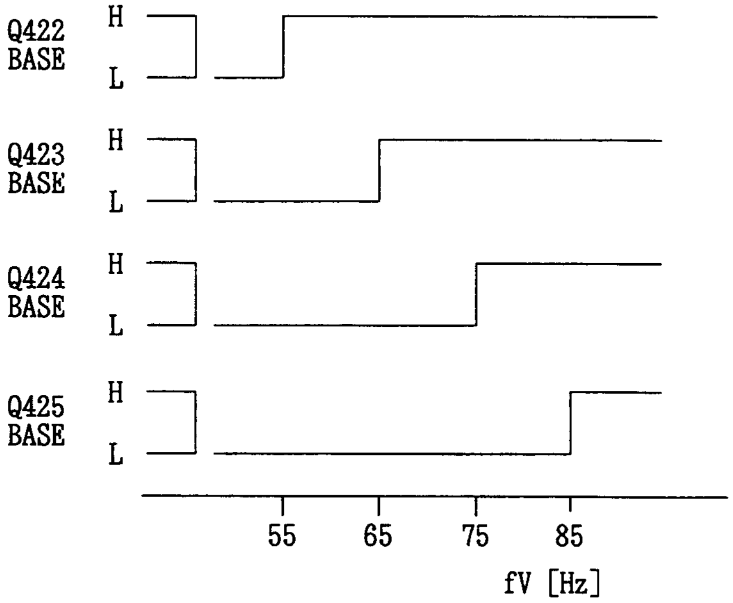
3.3.3 Vertical Size Circuit

The vertical picture size is adjusted to 237mm using VR421 while the input signal is the VGA350 line mode and V size control is maximum.
The vertical size is adjusted for pre-set timing,and it is written to E^2 PROM.
Vertical size control circuit explanation.
The DC signal to control V size is output from CPU PWB, and the voltage of 7 pin of IC402 changes in porpotinal to V size as shown in Fig. 3.3.3.a.
The DC signal (High or Low level) to switch the transistor Q422, Q423, Q424, and Q425, input to these transistors and control level is as shown in Fig. 3.3.3.b.
The resistance is changed by DC signal against vertical frequency,and the vertical raster size is almost same against the vertical frequency.

VERTICAL SIZE CONTROLLER



(Fig. 3.3.3.a)



(Fig. 3.3.3.b)

3.4 Blanking Circuit

The blanking pulse is generated at "DEF PWB", and input to "CRT PWB". Then it is clamped by DC bottom clamp circuit, and input to G1 of CRT. Therefore, the voltage of G1 is changed by blanking pulse as shown in Fig. 3.4, and retrace line is blanked at lower voltage G1. Blanking pulse generator circuit explanation.

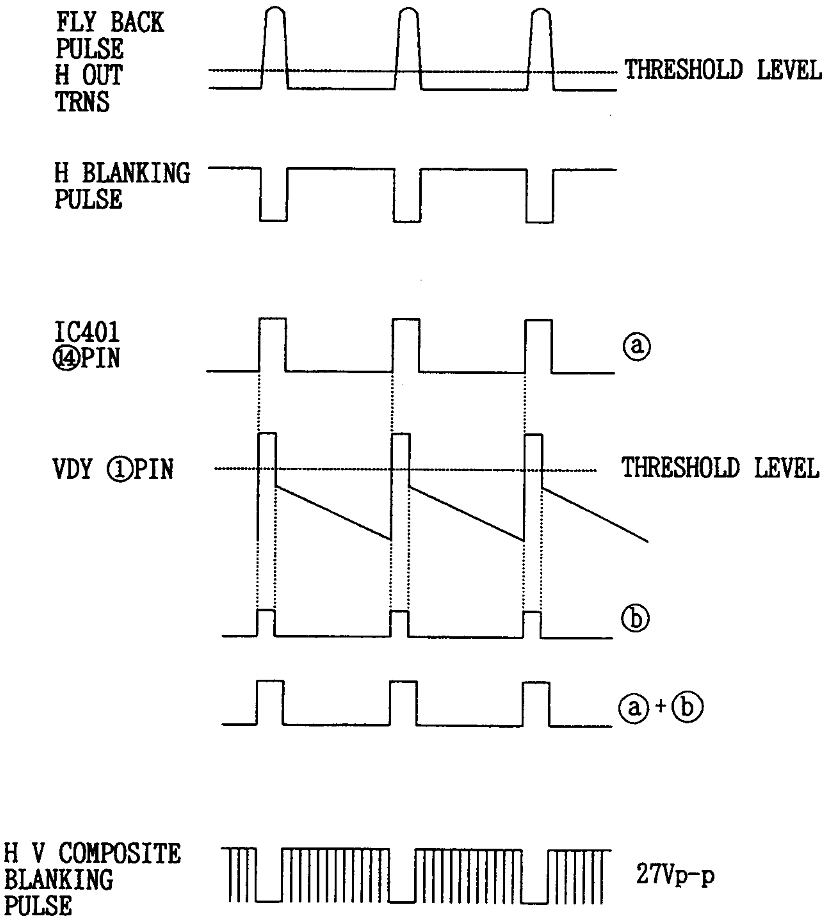
3.4.1 Horizontal Blanking Circuit

The fly back pulse of the H out trans. is input to base of Q5R2 through R5R4, D5R1, and C5R1 turning it off and on. Then the horizontal blanking pulse is generated collector of Q5R2.

3.4.2 Vertical Blanking Circuit

The vertical output wave is shaped by ZD5R1's breakdown voltage, and together with the pulse, pin 13 (IC401) as the vertical blanking pulse.
The horizontal and vertical blanking pulse are mixed at the collector of Q5R2, Q5R0, and Q5R1.

BLANKING CIRCUIT


FLY BACK PULSE H OUT TRNS
THRESHOLD LEVEL
H BLANKING PULSE
IC401 ⑭PIN
ⓐ
VDY ①PIN
THRESHOLD LEVEL
ⓑ
ⓐ+ⓑ
H V COMPOSITE BLANKING PULSE
27Vp-p

(Fig. 3.4)

3.5 Picture Distortion Correction Circuit (SDP PWB 339A)

3.5.1 Side Pincushion Circuit

This model has the following two types of side pincushion correction.

(1) Control of the voltage of the horizontal deflection

The side pincushion distortion is corrected by controlling the horizontal deflection circuit power supply voltage.

The control voltage waveform is supplied to the error amplifier IC5G1 pin 6 of the H size controller through R5H5 and C5H1.
The control voltage waveform circuit consists of IC5S1 to S5 and their ambient circuit.

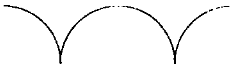
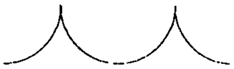
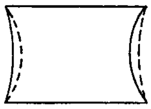
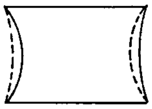
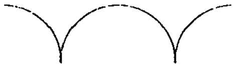
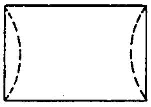
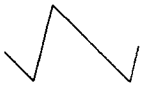
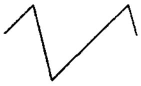
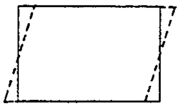
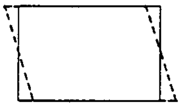
The voltage waveform between the both sides of the vertical S-correction capacitor C410 are supplied to the deferential amplifier IC5S2 pin 2 and 3. As the result, the vertical parabolic waveform is supplied from IC5S2 pin 1 to IC5S1 pin 1.
IC5S1 is the vertical frequency correction multiplier.
The DC voltage of the V-F/V converter of CPU is supplied to IC5S1 pin 4 through IC5S2, Q5S1, and connector SA-6.
Approx. $5V_{P-P}$ V-parabolic waveform, which is corrected vertical frequency tracking, is output at IC5S1 pin 8, and is supplied to IC5S5 pin 5 through IC5S3 pin 7.

IC5S5 is the horizontal width and cpu multiplier.
For horizontal width correction, the DC voltage of the horizontal deflection circuit power supply is supplied to IC5S4 pin 5 through R5W9,R5X0,C5X1, and connector SA-8.
User control Side Pincushion explanation. The CPU controlled DC voltage is supplied to IC5S5 pin 5 and 8 through IC5S4 and connector SA-7.
The control range is approx. 1V DC (4% barrel) to 11V DC (1.5% pin) at connector SA-7. Normally, CPU output is 6V DC at SA-7 without CPU control.Leave user control at factory preset for optimum pincushion performance. At that case the user control range may be shift little bit (approx. 2% barrel to 1% pin). By CPU control, user can adjust the side pincushion each range devided by horizontal frequency 33k, 43k, 50k, 62k, 71kHz.

VR5S2 (SIDE-PIN) is a variable resister for adjusting the side pincushion for correction of parts dispersion.

(2) Control of the horizontal sync phase for correction of right and left sides dispersion.

The deflection yoke has a distortion dispersion of right and left pincushion.
To reduce this dispersion, the parabolic voltage is supplied to horizontal phase shifter circuit.
The balance of the right and left distortion is adjusted by using the VR5U1.
There is no correction at the center position of VR5U1 adjustment, and the parabolic waveform voltage level and polarity is changed by adjusting clockwise or counterclockwise.

CORRECTION	VOLTAGE WAVEFORM	PICTURE
Balance of right and left side pincushion	at connector SA pin 2 clockwise  counterclockwise 	 
Side pincushion	at IC5S4 pin 14 	
Parallel	at connector pin 1 clockwise  counterclockwise 	 

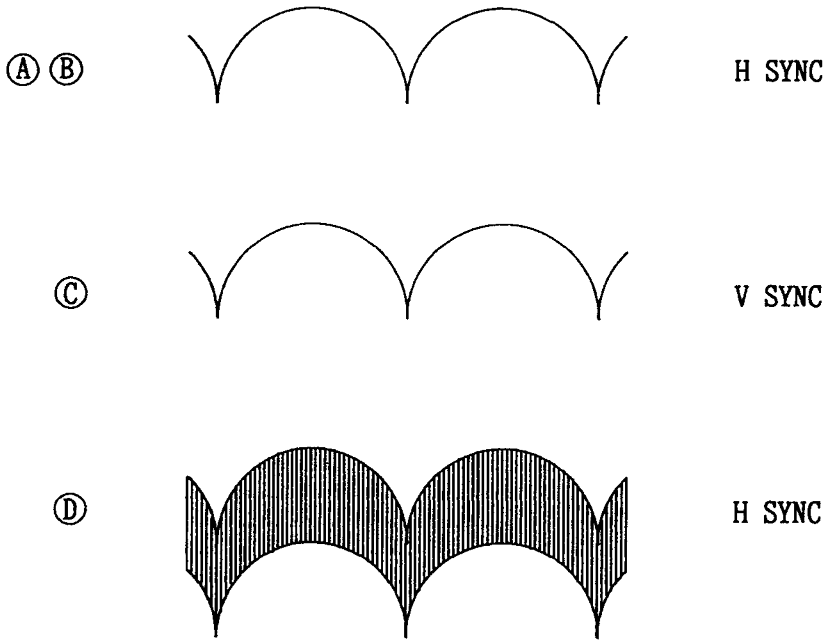
(Fig. 3.5)

3.5.2 Parallel Distortion Correction Circuit

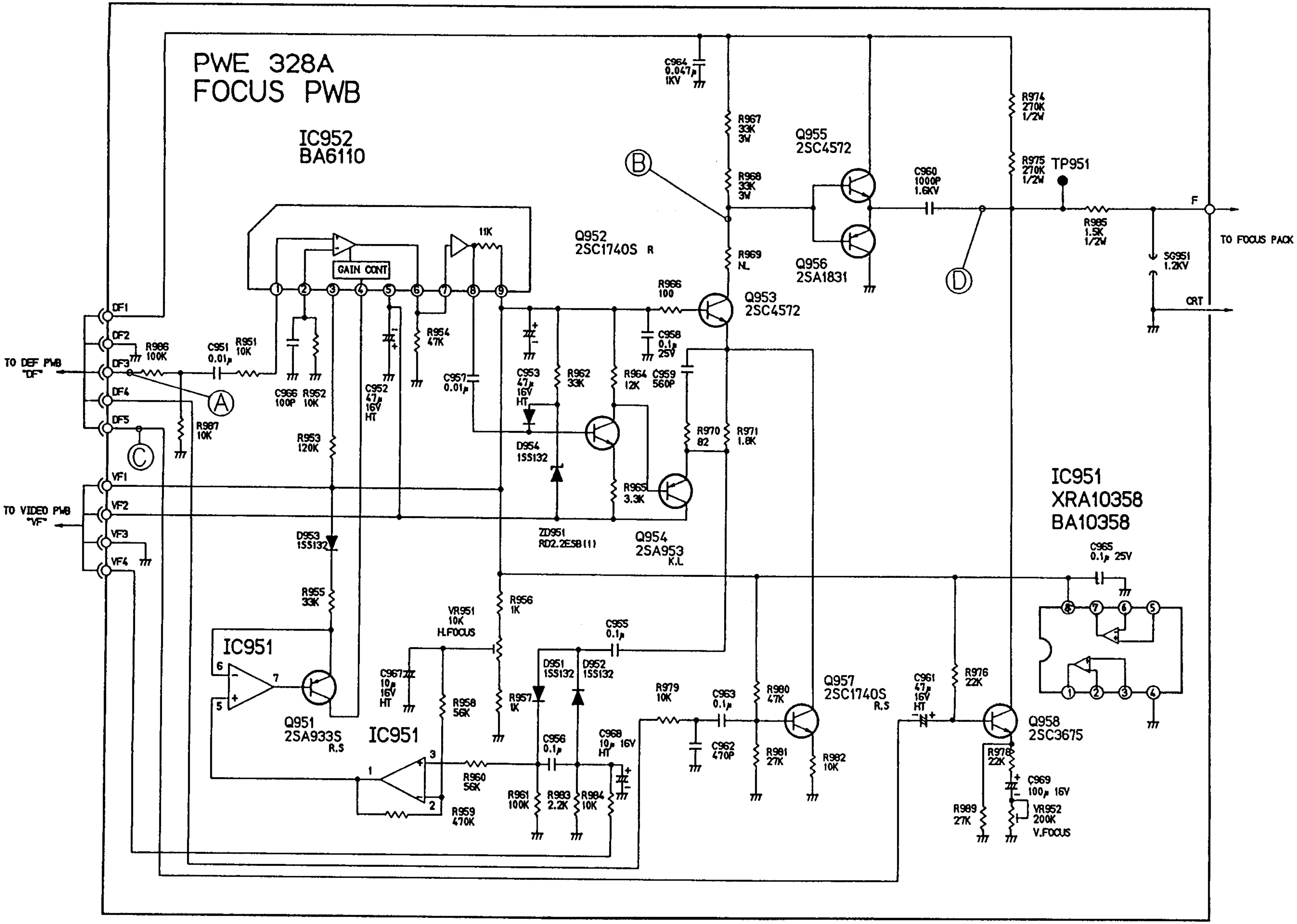
To correct the parallel distortion, the sawtooth voltage is supplied to the horizontal phase shifter circuit.
The balance of the right and left distortion is adjusted by using the VR5W1. There is no correction at the center position of VR5W1 adjustment, and the sawtooth waveform voltage level and polality is changed by adjusting clockwise or counterclockwise.

4. Focus Circuit

A vertical parabolic signal is fed to CN-DF5, amplified by Q958, and then output. A horizontal parabolic signal is fed to CN-DF3, but V_{P-P} value varies depending upon the frequency. The control is made by IC951, IC952, and associated circuits so that the output becomes constant.
The parabolic wave output from pin 8 of IC952 is amplified by Q952, Q953, and Q954 and the H parabolic wave and the V parabolic wave are mixed by C960 for output to the focus pack.



(Fig. 4.a)


PWE 328A
FOCUS PWB
IC952
BA6110
GAIN CONT
11K
IC951
XRA10358
BA10358
Q951
2SA933S
R.S
Q952
2SC1740S R
Q953
2SC4572
Q954
2SA953
K.L
Q955
2SC4572
Q956
2SA1831
Q957
2SC1740S
R.S
Q958
2SC3675
C964
0.047µ
1KV
R967
33K
3W
R968
33K
3W
R969
NL
R966
100
R974
270K
1/2W
R975
270K
1/2W
TP951
C960
1000P
1.6KV
R985
1.5K
1/2W
SG951
1.2KV
F
TO FOCUS PACK
CRT
DF1
DF2
DF3
DF4
DF5
TO DEF PWB
"DF"
VF1
VF2
VF3
VF4
TO VIDEO PWB
"VF"
R986
100K
C951
0.01µ
R951
10K
R987
10K
C966
100P
R952
10K
C952
47µ
16V
HT
R954
47K
C957
0.01µ
R953
120K
C953
47µ
16V
HT
D954
1SS132
R962
33K
R964
12K
C959
560P
C958
0.1µ
25V
R970
82
R971
1.8K
R965
3.3K
ZD951
RD2.2ESB(1)
D953
1SS132
R955
33K
VR951
10K
H.FOCUS
R956
1K
C955
0.1µ
D951
1SS132
D952
1SS132
C967
10µ
16V
HT
R957
1K
R958
56K
R960
56K
R959
470K
C956
0.1µ
C968
10µ 16V
HT
R961
100K
R983
2.2K
R984
10K
R979
10K
C963
0.1µ
C962
470P
R980
47K
R981
27K
R982
10K
C961
47µ
16V
HT
R976
22K
R978
22K
C969
100µ 16V
VR952
200K
V.FOCUS
R989
27K
C965
0.1µ 25V
A
B
C
D

(Fig. 4. b)

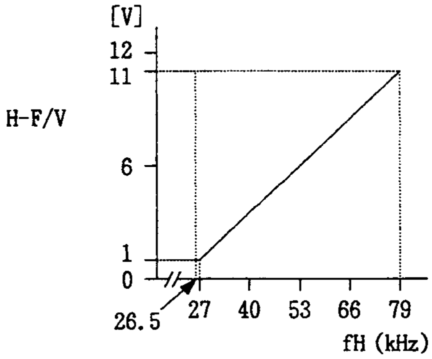
5. CPU Circuit

5.1 H-F/V Function

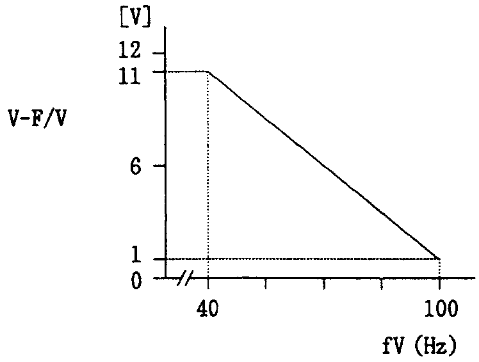
The horizontal sync signal wave shaped on the Video PWB is fed to pin 22 of the CPU. The CPU counts the frequency of horizontal sync signal, and the appropriate DC voltage is output from IC802 (D/A converter) pin 4. This voltage is amplified by the amplifier 2.4 times and output to the DEF PWB via CN-P3. (See Fig. 5.1.)

5.2 V-F/V Function

The vertical sync signal waveform shaped on the Video PWB is fed to pins 20 and 26 of CPU. The CPU counts the frequency of the vertical sync signal, and the appropriate DC voltage is output from IC802 (DAC) pin 5. This voltage is amplified 2.4 times and output to the DEF PWB via CN-P6. (See Fig. 5.2.)



(Fig. 5.1)

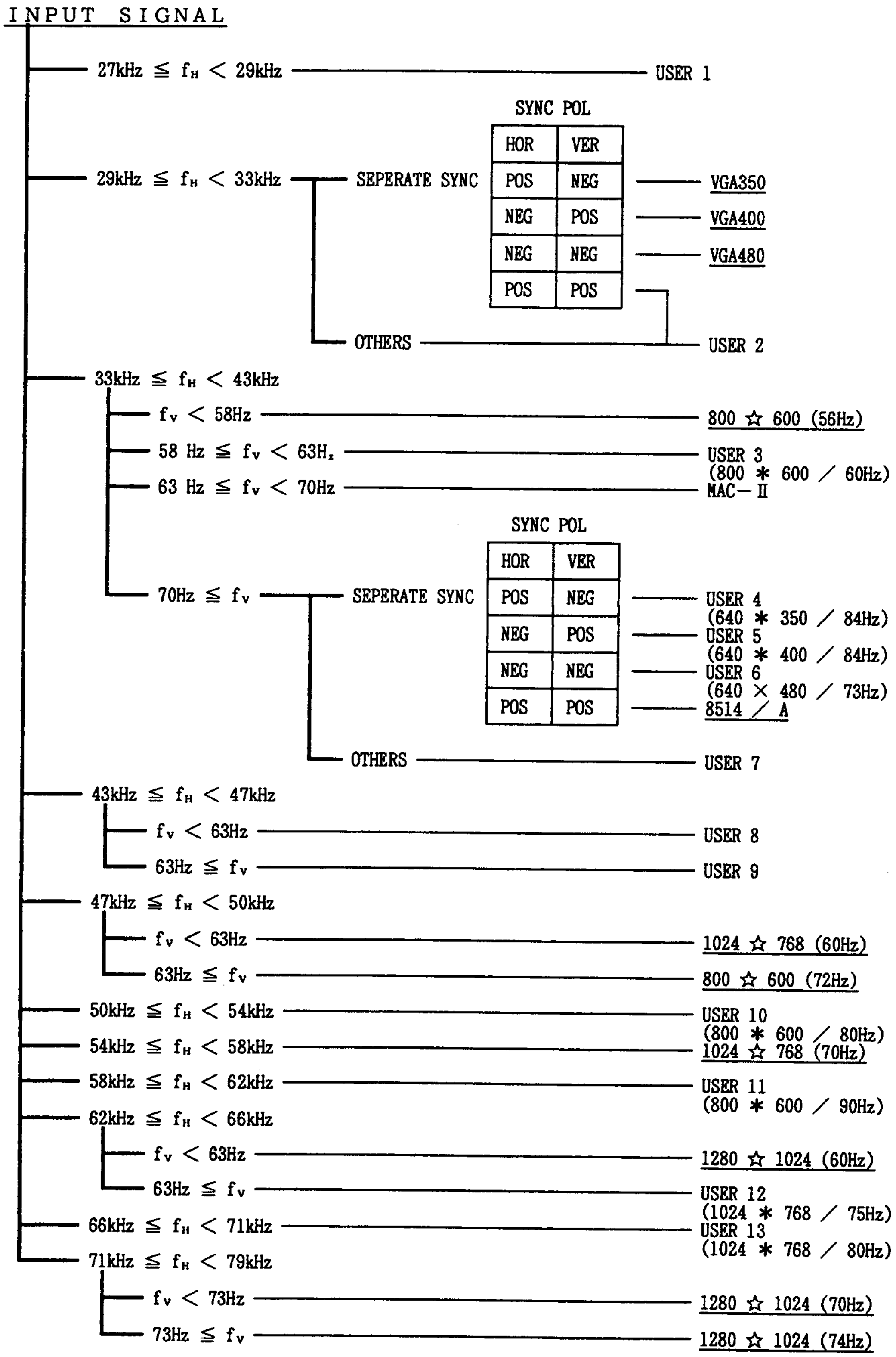


(Fig. 5.2)

5.3 Automatic Signal Discrimination Function

The CPU discriminates the input signal based on the horizontal/vertical frequencies, sync signal type, i.e. separate sync, separate composite sync or sync on green, and the sync polarity scheme (positive/negative). Refer to "Signal Identification Flow Chart" (Fig. 5.3) for further details.

SIGNAL IDENTIFICATION FLOWCHARTHART


INPUT SIGNAL
27kHz ≦ fH < 29kHz
USER 1
SYNC POL
HOR
VER
29kHz ≦ fH < 33kHz
SEPERATE SYNC
POS NEG
VGA350
NEG POS
VGA400
NEG NEG
VGA480
POS POS
OTHERS
USER 2
33kHz ≦ fH < 43kHz
fV < 58Hz
800 ☆ 600 (56Hz)
58 Hz ≦ fV < 63Hz
USER 3
(800 ＊ 600 ／ 60Hz)
63 Hz ≦ fV < 70Hz
MAC－II
SYNC POL
HOR
VER
70Hz ≦ fV
SEPERATE SYNC
POS NEG
USER 4
(640 ＊ 350 ／ 84Hz)
NEG POS
USER 5
(640 ＊ 400 ／ 84Hz)
NEG NEG
USER 6
(640 × 480 ／ 73Hz)
POS POS
8514 ／ A
OTHERS
USER 7
43kHz ≦ fH < 47kHz
fV < 63Hz
USER 8
63Hz ≦ fV
USER 9
47kHz ≦ fH < 50kHz
fV < 63Hz
1024 ☆ 768 (60Hz)
63Hz ≦ fV
800 ☆ 600 (72Hz)
50kHz ≦ fH < 54kHz
USER 10
(800 ＊ 600 ／ 80Hz)
54kHz ≦ fH < 58kHz
1024 ☆ 768 (70Hz)
58kHz ≦ fH < 62kHz
USER 11
(800 ＊ 600 ／ 90Hz)
62kHz ≦ fH < 66kHz
fV < 63Hz
1280 ☆ 1024 (60Hz)
63Hz ≦ fV
USER 12
(1024 ＊ 768 ／ 75Hz)
66kHz ≦ fH < 71kHz
USER 13
(1024 ＊ 768 ／ 80Hz)
71kHz ≦ fH < 79kHz
fV < 73Hz
1280 ☆ 1024 (70Hz)
73Hz ≦ fV
1280 ☆ 1024 (74Hz)

NOTE: ☆☆☆ SIGNAL HAS BACK UP MEMORY (12 SIGNALS).

(Fig. 5.3)

5.4 User Control Function

When the user switch on the Control PWB is pressed, the encoded signal (the circuit consisting of D101 ~ D116) is fed to the CPU via CN-C2 ~ C7.
The CPU causes data in the CPU to be changed by the above signal.
The user control function is divided into three by the user level.

5.4.1 User Level 1

The following control is done at user level 1.

Function	Output Pin of IC802	" CN-P "	Dwg. No.
H POSITION	pin 12	pin 1	5.4.1.a
H SIZE	pin 13	pin 2	5.4.1.b
V POSITION	pin 14	pin 4	5.4.1.c
V SIZE	pin 15	pin 5	5.4.1.d

The CPU outputs DC voltage meeting the changed date from IC802 (D/A converter).

5.4.2 User Level 2

At user level 2, side pincushion corrections and R/G/B intensity adjustments are made.

(1) Side-Pin

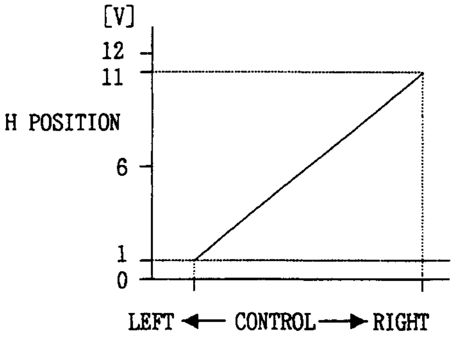
The operation of side-pin is the same as in the case of user level 1 (output pin of IC802: pin 6 , " CN-P ": Pin 7 Dwg. No. 5.4.2.a).

(2) R/G/B Intensity

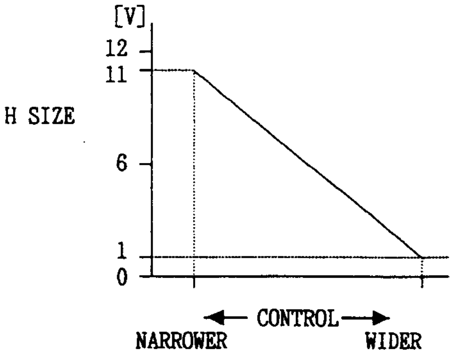
When the data is changed by the user control switch, the CPU causes the output (R: pin 13, G: pin 2, and B: pin 4) of IC861 (multiplier D/A converter) to be varied for each color. As a result, the amplitude of the video output voltage can be controlled for each color independently of others.

5.4.3 User Level 3

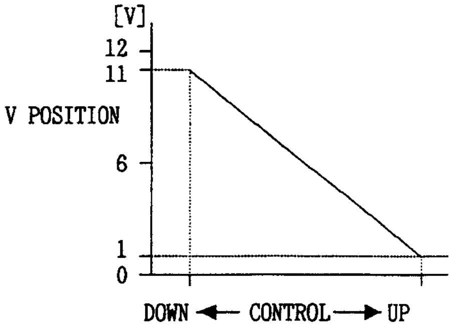
The control of R/G/B Sub-Brightness is made at user level 3.
When the data is changed by the user control switch, the CPU cause the output voltage (R: pin 13, G: pin 2, B: pin 4) of IC860 (multiplier D/A converter) to be varied for each color. The cathode bias level can be controlled for each color independently of others.



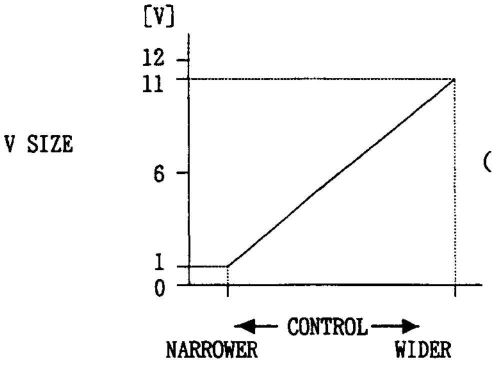
(Fig. 5.4.1.a)



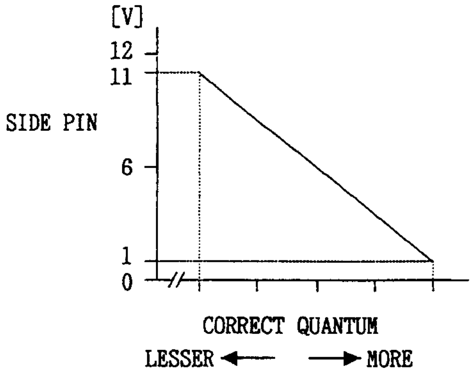
(Fig. 5.4.1.b)



(Fig. 5.4.1.c)



(Fig. 5.4.1.d)



(Fig. 5.4.2.a)

5.5 Data Memory Function

Each data described in step 5.4 is automatically stored in IC804 (E^2 PROM) four seconds after the last user control key has been pressed.
Data of horizontal and vertical amplitude and position data described in step 5.3 is stored in E^2 PROM by changing the address for each signal.
Side-pin data is stored in memory by changing the address at each band of horizontal frequency.
Data of R/G/B intensity and that of R/G/B Sub-Brightness is stored in memory by changing the address at each color set by the color switch (SW112).
The address of each data in E^2 PROM is shown in Fig. 5.5.

5.6 Various Switching Output

A switch over output from the CPU drives the horizontal/vertical oscillation/output circuits.

5.6.1 Horizontal System

The switchover output of the horizontal system is shown in Fig. 5.6.1.

5.6.2 Vertical System

The switchover output of the vertical system is shown in Fig. 5.6.2.

EEPROM MEMORY MAP

256 WORDS*8 BITS

MEMORY NAME	FACTORY DATA (BACK UP)				USER DATA			
	H PS	H SZ	V PS	V SZ	H PS	H SZ	V PS	V SZ
VGA350	00	01	02	03	30	31	32	33
VGA400	04	05	06	07	34	35	36	37
VGA480	08	09	0A	0B	38	39	3A	3B
800*600(56Hz)	0C	0D	0E	0F	3C	3D	3E	3F
MAC−Ⅱ	10	11	12	13	40	41	42	43
8514A	14	15	16	17	44	45	46	47
1024*768(60Hz)	18	19	1A	1B	48	49	4A	4B
800*600(72Hz)	1C	1D	1E	1F	4C	4D	4E	4F
1024*768(70Hz)	20	21	22	23	50	51	52	53
1280*1024(60Hz)	24	25	26	27	54	55	56	57
1280*1024(70Hz)	28	29	2A	2B	58	59	5A	5B
1280*1024(74Hz)	2C	2D	2E	2F	5C	5D	5E	5F
USER 1	−−	−−	−−	−−	60	61	62	63
USER 2	−−	−−	−−	−−	64	65	66	67
USER 3	−−	−−	−−	−−	68	69	6A	6B
USER 4	−−	−−	−−	−−	6C	6D	6E	6F
USER 5	−−	−−	−−	−−	70	71	72	73
USER 6	−−	−−	−−	−−	74	75	76	77
USER 7	−−	−−	−−	−−	78	79	7A	7B
USER 8	−−	−−	−−	−−	7C	7D	7E	7F
USER 9	−−	−−	−−	−−	80	81	82	83
USER 10	−−	−−	−−	−−	84	85	86	87
USER 11	−−	−−	−−	−−	88	89	8A	8B
USER 12	−−	−−	−−	−−	8C	8D	8E	8F
USER 13	−−	−−	−−	−−	90	91	92	93
(SPACE)	94~CD (58 WORDS)							

	FACTORY DATA FOR COLOR N (BACK UP FOR #1, #2)	USER DATA FOR COLOR #1	USER DATA FOR COLOR #2
RGBFLG	CE	D8	E2
R INTENSITY	CF	D9	E3
G INTENSITY	D0	DA	E4
B INTENSITY	D1	DB	E5
R SUB-BRT(SIGN)	D2	DC	E6
R SUB-BRT(VALUE)	D3	DD	E7
G SUB-BRT(SIGN)	D4	DE	E8
G SUB-BRT(VALUE)	D5	DF	E9
B SUB-BRT(SIGN)	D6	E0	EA
B BRT(VALUE)	D7	E1	EB

	FACTORY DATA (BACK UP)	USER DATA
SIDE-PIN DATA 1	EC	ED
SIDE-PIN DATA 2	EE	EF
SIDE-PIN DATA 3	F0	F1
SIDE-PIN DATA 4	F2	F3
SIDE-PIN DATA 5	F4	F5
SIDE-PIN DATA 6	F6	F7
SIDE-PIN (VGA350)	F8	F9
SIDE-PIN (VGA480)	FA	FB

(SPACE)	FC	SIDE-PIN ADJUST INITIAL FLAG	FD
EEPROM INITIAL FLAG	FE		
SELF ADJUST FLAG	FF		

NOTE: H PS: HORIZONTAL POSITION   V PS: VERTICAL POSITION
H SZ: HORIZONTAL SIZE   V SZ: VERTICAL SIZE

(Fig. 5.5)

H Select Output

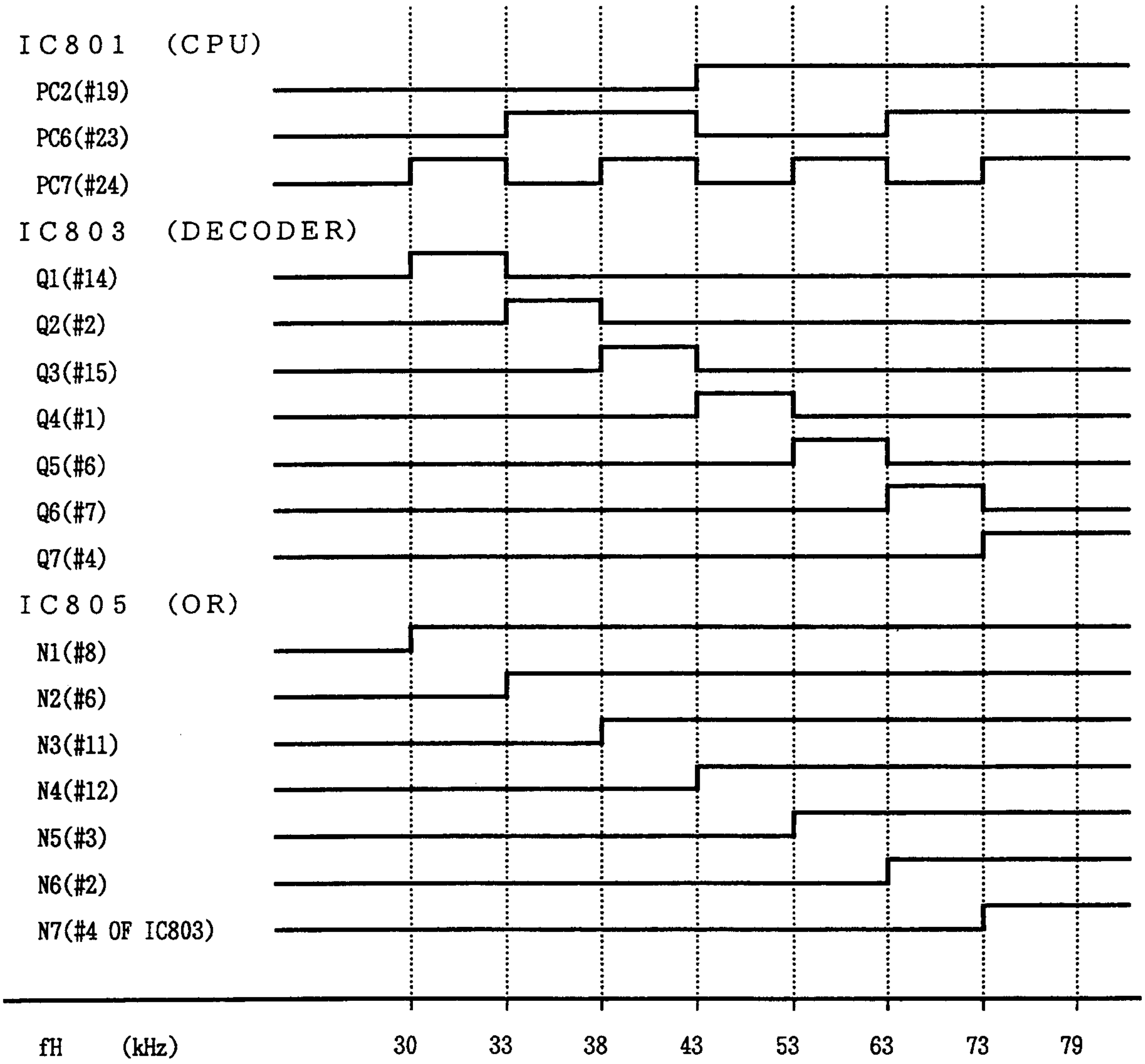

IC801 (CPU)
PC2(#19)
PC6(#23)
PC7(#24)
IC803 (DECODER)
Q1(#14)
Q2(#2)
Q3(#15)
Q4(#1)
Q5(#6)
Q6(#7)
Q7(#4)
IC805 (OR)
N1(#8)
N2(#6)
N3(#11)
N4(#12)
N5(#3)
N6(#2)
N7(#4 OF IC803)
fH (kHz)
30
33
38
43
53
63
73
79

Fig. 5.6.1

V Select Output

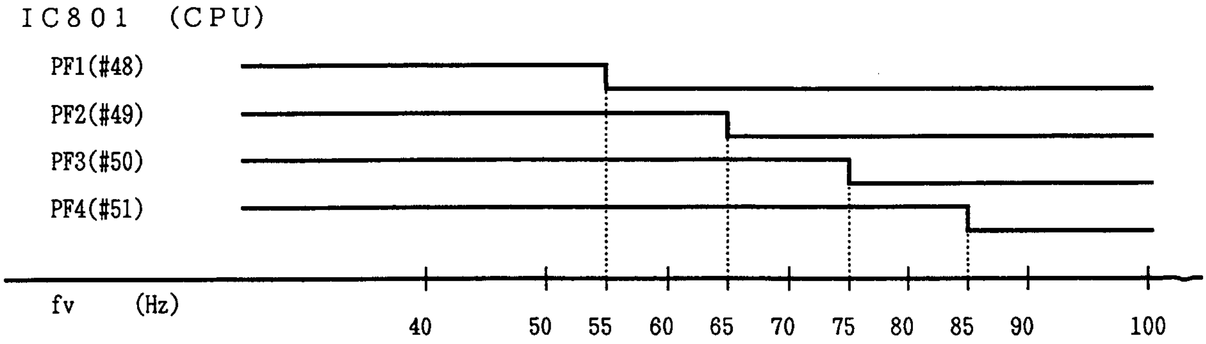
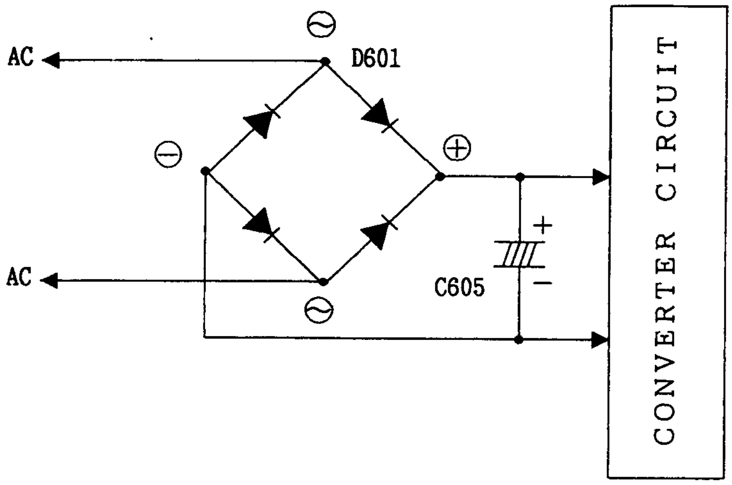

IC801 (CPU)
PF1(#48)
PF2(#49)
PF3(#50)
PF4(#51)
fv (Hz)
40
50
55
60
65
70
75
80
85
90
100

Fig. 5.6.2

6. SWITCHING REGULATOR UNIT

6.1 Rectifying and smoothing circuit

AC input is rectified by D601. Then, it is smoothed by C605. The resulting DC voltage is supplied to the converter circuit.


AC
AC
D601
⊕
C605
+
−
CONVERTER CIRCUIT

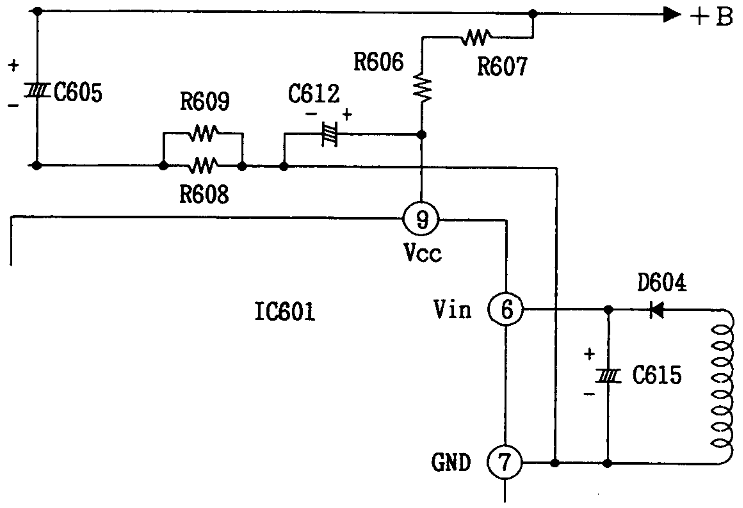
(Fig. 6.1) Rectifying and Smoothing Circuit

6.2.1 Auxiliary power supply circuit (JC-2141UMA)

The auxiliary power supply circuit is needed to activate IC601. When the power is turned on, the charging current flows into the capacitors C612 via R606 and R607.

Oscillation starts when the voltage of IC601 pin 9 reaches 17V by this charging operation.

After the start of oscillation, the forward voltage of the auxiliary winding for the switching transformer is rectified and smoothed by D604 and C615. The resulting DC voltage is supplied to IC601 pin 6.


+B
R606
R607
C605
R609
C612
R608
9
Vcc
IC601
Vin
6
D604
C615
GND
7

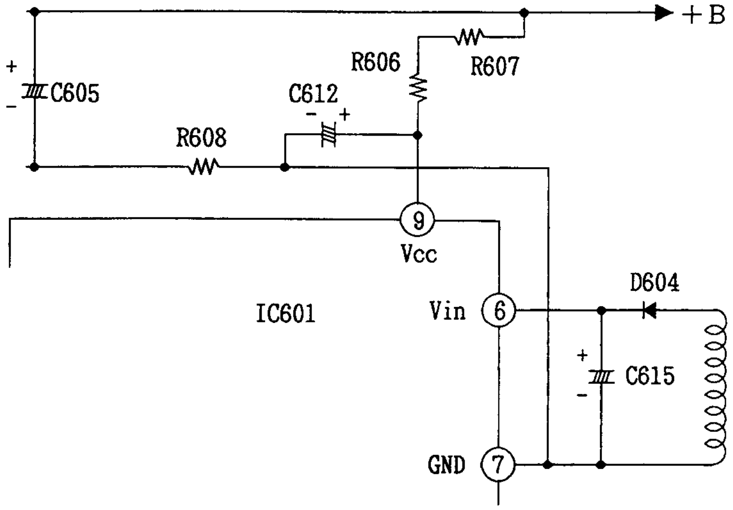
(Fig. 6.2.1) Auxiliary Power Supply Circuit

6.2.2 Auxiliary power supply circuit (JC-2141UMB/B(EE)/R)

The auxiliary power supply circuit is needed to activate IC601. When the power is turned on, the charging current flows into the capacitors C612 via R604 and R607.

Oscillation starts when the voltage of IC601 pin 9 reaches 17V by this charging operation.

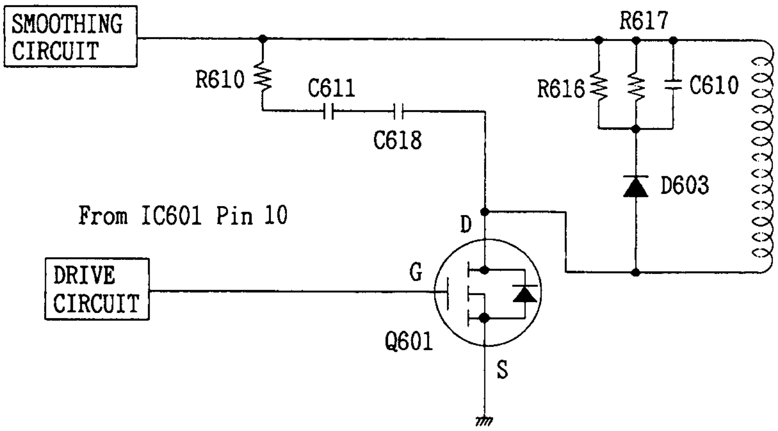
After the start of oscillation, the forward voltage of the auxiliary winding for the switching transformer is rectified and smoothed by D604 and C615. The resulting DC voltage is supplied to IC601 pin 6.


+B
C605
R606
R607
C612
R608
9
Vcc
IC601
Vin
6
D604
C615
GND
7

(Fig. 6.2.2) Auxiliary Power Supply Circuit

6.3 Converter circuit

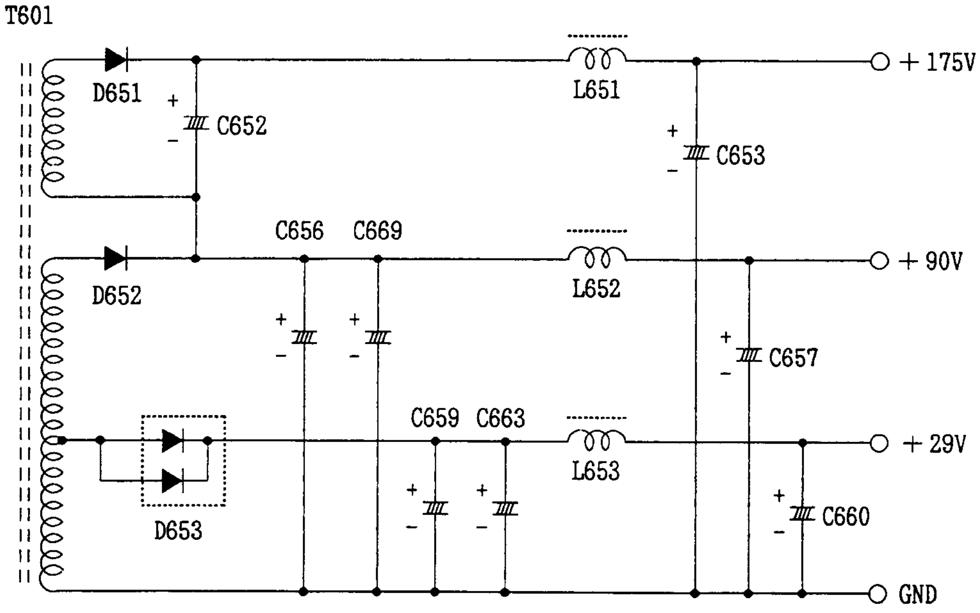
The converter circuit consists of the primary winding of the switching transformer T601, a switching device Q601, and surge absorbers (C610, R616, R617, D603, C611, C618 and R610) that are connected to the primary winding. The oscillating signal from IC601 pin 10 is applied to the gate of Q601 causing the drain-source to be turned OFF and ON so that the oscillating voltage is applied to the primary winding of T601.


SMOOTHING CIRCUIT
R617
R610
C611
R616
C610
C618
D603
From IC601 Pin 10
D
DRIVE CIRCUIT
G
Q601
S

(Fig. 6.3) Converter Circuit

6.4 Output rectifying and smoothing circuit

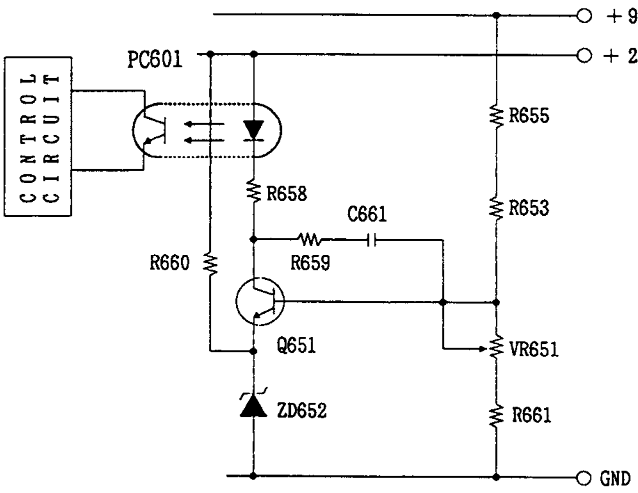
The fly-back voltages generated at the secondary windings of the switching transformer T601 are rectified by D651, D652 and D653. Then, these voltages are smoothed by C652, C653, C656, C669, C657, C659, C663 and C660 so that rectified DC voltages are obtained.
The fly-back voltages are kept constant by controlling the ON period duty cycle of Q601 in the converter circuit.


T601
D651
C652
L651
C653
+175V
D652
C656
C669
L652
+90V
C657
C659
C663
L653
+29V
C660
D653
GND

(Fig. 6.4) Output Rectifying and Smoothing Circuit

6.5 Error detection amplifier circuits

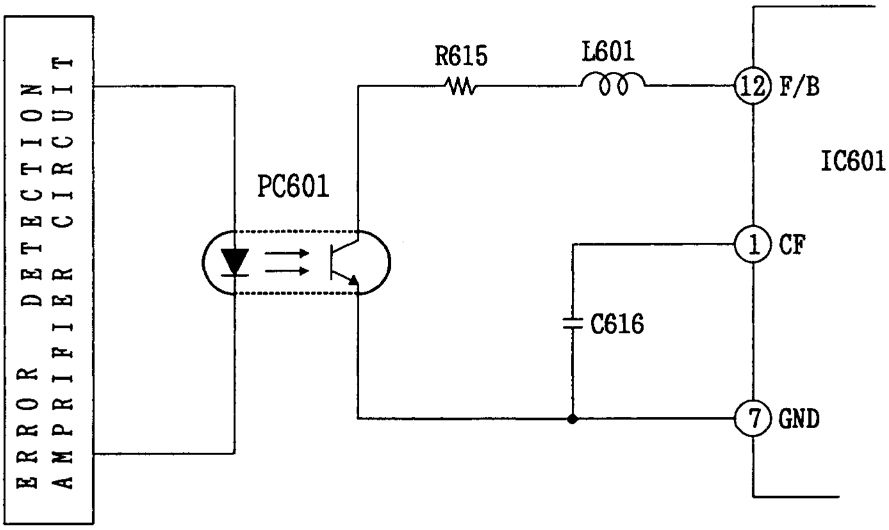
The output voltage 90V is divided by the network resistors. This divided voltage is compared to the reference voltage at the error amplifier Q651, and ZD652. An error signal is applied to the control circuit via the photocoupler PC601.


+90V
+29V
PC601
CONTROL CIRCUIT
R655
R658
C661
R653
R660
R659
Q651
VR651
ZD652
R661
GND

(Fig. 6.5) Error Detection Amplifier Circuit

6.6 Oscillating and control circuits

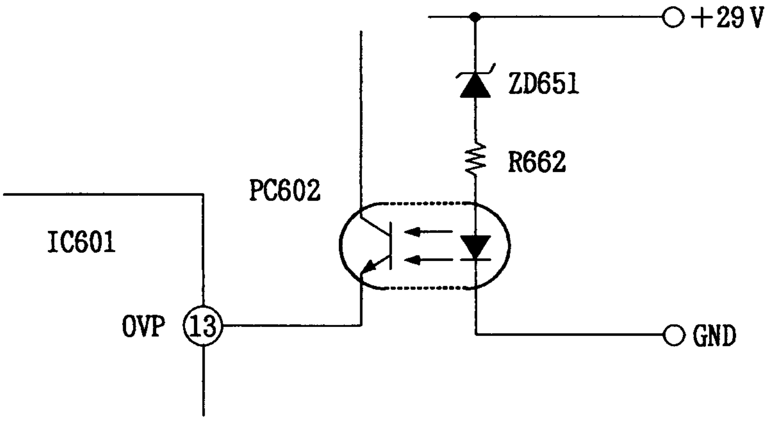
The oscillating and control circuits are contained in IC601.
IC601 has a built-in oscillator whose frequency is determined by C616 connected to pin 1. The output of the error detection amplifier circuit is feed back to the control circuit pin 12 via PC601 to control the duty cycle of Q601 so that output voltage is kept constant.


ERROR DETECTION
AMPRIFIER CIRCUIT
PC601
R615
L601
12 F/B
IC601
1 CF
C616
7 GND

(Fig. 6.6) Oscillating and Control Circuit

6.7 Over voltage protection

If some failure occurs and the 29V line output voltage increases beyond 33V to 38V, the voltage at the output is sensed by the Zener Diode ZD651. These Diode will activate the LED within the photocoupler PC602, and turn on the transistor within it.
Once the transistor is on, pin 13 voltage of IC601 will go high, stopping the oscillation within this IC.


+29 V
ZD651
R662
PC602
IC601
OVP 13
GND

(Fig. 6.7) Over Voltage Protection

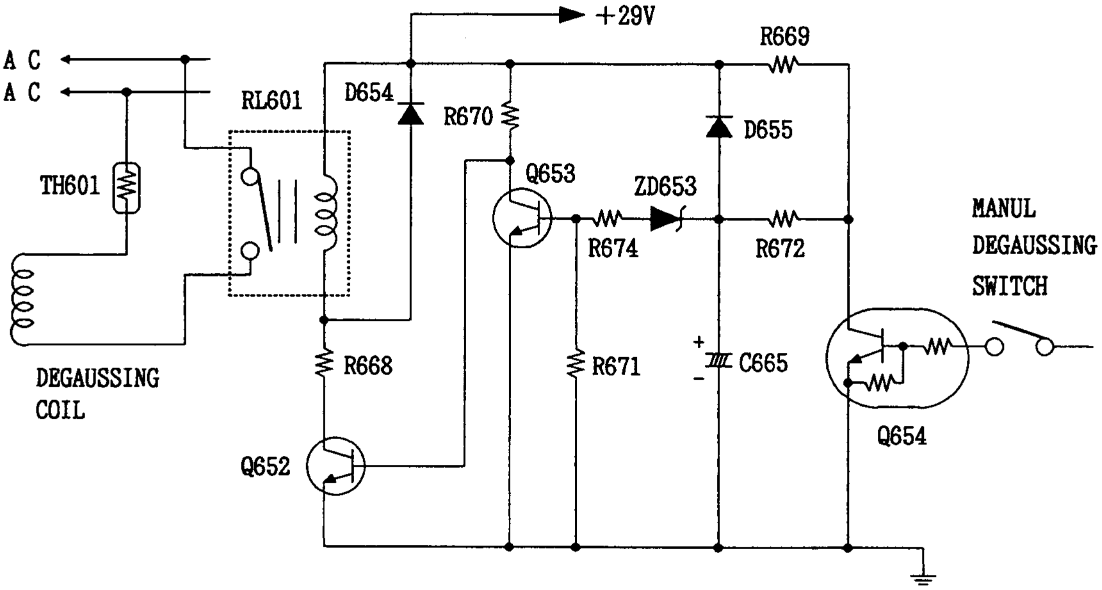
6.8 Auto and manual degaussing circuit

(1) Auto Degaussing Circuit

When the unit is turned ON. The 29V DC output at K3 rises. This will cause Q652 to turn ON. During the period of Q652 turned on, the current flows through the Degaussing Coil.
The ON period for this transistor is determined by R669, R672, ZD653 and C665. (approx. 3 sec.)
After the approx. 3 sec, Q653 turn on, and this will cause Q652 to turn off.

(2) Manual Degaussing Circuit

When the Degaussing switch is turned ON, Q654 conducts discharging C665. Therefore, Q653 turns off and Q652 is turned on. Then current flow through the Degaussing Coil, and the current flow through it until approx. 3 sec after the Degaussing switch is off.


+29V
A C
A C
RL601
D654
R670
R669
D655
TH601
Q653
ZD653
R674
R672
MANUL
DEGAUSSING
SWITCH
R668
R671
+
C665
-
DEGAUSSING
COIL
Q654
Q652

(Fig. 6.8) Auto and Manual Degaussing Circuit

PARTS DIFFERENCE LIST BETWEEN JC-2141UMA AND JC-2142UMA
(JC-2142UMA: GENERIC OEM VERSION)

ITEM	JC-2141UMA		JC-2142UMA	
	Part Number	Description	Part Number	Description
CRT	33021501	Polish	33021502	Silica coating
User's Manual	78126002	NEC Branded FG Series	78126651	No Brand Generic
Template	78652201	NEC Branded FG Series	78652361	No Brand Generic
Monitor questionnaire	78034298		———	Delete
Moniter sales office list	78034406		———	Delete
FG-ACC-P	79692941	AccuColor Demodisk PC	———	Delete
FG-ACC-M	79692951	AccuColor Demodisk MAC	———	Delete
Carton Box	25826321	NEC Branded FG Series	25826441	No Brand Generic
Cabinet Front ASSY	25314001	NEC Logo	25315701	No Logo
Name Plate, Instruction	25775031	JC-2141UMA	25776791	JC-2142UMA

REPLACEMENT PARTS LIST

The components specified for Model JC-2141UMA.

Notes: The components identified by ⚠ mark are critical for safety.
Replace only with parts Number specified.

SYMBOL	PARTS NO	DESCRIPTION
*** CRT & TUNER ***		
⚠CRT	33021501	CRT AF21F9SLB22-C-TC42
*** ICS ***		
⚠IC5E1	370A1009	IC UPC1093J-T (REG)
IC811	370E6005	IC PST518A
IC503 IC8G0 IC8G2	37011018	IC UPC311C (COMP)
IC402 IC5G1	37011024	IC UPC3403C (OP-AMP)
⚠IC2001 ⚠IC2002	37011132	IC UPC4082C (OP-AMP)
IC471 IC5S2 IC506 IC509 IC809 IC810 IC863 IC951	37011206	IC XRA10358 (OP-AMP)
IC5S3 IC5S4 IC504 IC806 IC807 IC808 IC862 IC864	37011210	IC XRA10324 (Q OP-AMP)
⚠IC5E2 IC5G0 IC8A2 IC8G1	37011262	IC XRA10393 (COMP)
IC431 IC505	37051036	MOS UPD4066BC
IC803	37051042	MOS UPD4028BC (BCD DECI)
IC8G5	37051096	IC SN74LS367AN (BUFF)
IC502 IC8G4	37051179	IC SN74LS123N (MONO MLT)
IC805	37053036	MOS SN74HC32N (OR)
IC5A1	37053390	MOS HD74HC123AP
IC804	37055401	MOS XRM93C56B-E
⚠IC501	37056295	IC LA7851
IC702 IC703 IC704	37056433	IC M51399P
IC5S1 IC952	37056618	IC BA6110
⚠IC601	37056810	IC M67297 (SW.REG CONT)
IC860 IC861	37056812	IC M62362P
IC802	37056813	IC M62359P
IC701	37056814	IC M52035P
IC8G3	37056867	IC M52036SP
IC5S5	37056877	IC NJM4200D (MULTIPLIER)
IC571 IC8A1	37056885	IC NJM3404AD
IC401	37056887	IC TDA1675A
IC705 IC706 IC707	37056905	IC VPA12H
IC801	37056915	IC UPD78C12AGQ-A66-36
IC510 IC511	37101543	IC XRA10339
*** TRANSISTORS ***		
⚠Q5M4	350A1500	TR 2SA1767-TA
⚠Q2002 Q421 Q462 Q5G2 Q5G4 Q5M1 Q5R3 Q572 ⚠Q652 ⚠Q653 Q714 Q715 Q716 Q8A2 Q8A4 Q8A6 Q8A8 Q807 Q861 Q862 Q952 Q957	350E3218	TR 2SC1740S-T R
Q701 Q702 Q703 Q704 Q705 Q706 Q710 Q726 Q727 Q728 Q731 Q733	350H1811	TR,2SC2901 K-T
Q740 Q741 Q742	350H4417	TR,2SC1473-TA Q
Q7C0	350H5017	TR,2SC3811-TA Q
Q5A1 Q5R2 Q502 Q806	350H5018	TR,2SC3811-TA R
Q954	350K4311	TR 2SA953-T K
⚠Q5E2	350K4411	TR 2SA952 K,AT
Q5A3	350K4412	TR 2SA952 L,AT
⚠Q2001 Q5G5 Q5M2 Q5R4 Q501 Q56E Q573	350K4518	TR 2SA933-T R
Q743 Q744 Q745	350K5217	TR,2SA1018-TA Q
Q5G1 Q5G3 Q5M0 Q5S1 Q711 Q712 Q713 Q8A3 Q8A7 Q863 Q864 Q951	350K5718	TR 2SA933S-T R
Q732	350K7500	TR 2SA1206-T
Q956	35011600	TR 2SA1831
Q451	35025211	TR 2SB546 K
Q571	35025212	TR 2SB546 L
Q5A2 ⚠Q5E1	35050918	TR 2SC1384 R
⚠Q651	35053012	TR 2SC1941 L
Q481	35056311	TR 2SC2688 K
Q482	35058905	TR,2SC1841 E
Q452	35063411	TR,2SD401A K
Q461 Q471 Q8A1 Q8C0	35065416	TR,2SD882 P
Q723 Q724 Q725	35080200	TR 2SC2407/2407A
Q958	35084600	TR,2SC3675
Q953 Q955	35094200	TR 2SC4572
⚠Q581	35094300	TR 2SC3998
Q422 Q423 Q424 Q425	351A0690	TR DTC115ES-TP
⚠Q5E4	351G0553	TR DTA143ES-T
Q56A Q56C Q59A Q59E	351G0560	TR DTA144WS-T
Q708 Q8G0 Q8G1	351G0600	TR DTA114ES-T
⚠Q2005 ⚠Q2006 Q5G0 Q5R0 Q707 Q709 Q719 Q734 Q8A5 Q8G2 Q8G4 Q802 Q803 Q804 Q805	351G0601	TR DTC114ES-T
⚠Q5E0 Q50A Q51A Q52A Q53A Q54A Q55A Q58A Q59C Q59F Q717 Q718 Q8G3	351G0602	TR DTC144ES-T
Q801	351G0641	TR DTC114YS-T
⚠Q654	351G0653	TR DTC123ES-T
Q2101 Q5R1	351G0655	TR DTC143ES-TP
Q5G6 Q5M3 Q574	35122500	TR 2SK758
Q8A9	35122600	TR 2SK701
⚠Q5A4 ⚠Q5A5	35122800	TR 2SK1271
Q591 Q592 Q593	35125700	TR 2SK947

SYMBOL	PARTS NO	DESCRIPTION
Q594 Q595 Q596	35125700	TR 2SK947
⚠Q601	35125900	TR,2SK1411
⚠Q5E3	35126900	TR 2SK806
Q860	35560416	TR 2SD794A P
⚠CR601	35595014	TRIAC AC10DGM

*** DIODES ***

SYMBOL	PARTS NO	DESCRIPTION
⚠D605	360K1010	DIODE,SI.1S2472
D101 D102 D103	360K1027	DI 1SS132 AT52
D104 D105 D106		
D107 D108 D109		
D110 D111 D112		
D113 D114 D115		
D116 ⚠D2003 ⚠D2006		
⚠D2008 ⚠D2101 D2102		
D2103 D401 D5A0		
D5A1 D5A3 ⚠D5E1		
D5G0 D5G1 D5G2		
D5G4 D5G5 D5G6		
D5M0 D5M2 D5M3		
D5M4 D5R1 D501		
D502 D591 D592		
⚠D654 ⚠D655 D7G0		
D701 D702 D703		
D704 D705 D706		
D707 D708 D709		
D710 D711 D712		
D713 D714 D715		
D716 D717 D718		
D719 D720 D721		
D722 D723 D725		
D726 D727 D728		
D729 D730 D8A1		
D8A2 D8A3 D8A4		
D8A5 D8A6 D8G0		
D8G1 D8G2 D8G3		
D8G4 D8G5 D8G6		
D8G7 D8G8 D8G9		
D8H2 D8H3 D8H4		
D803 D804 D805		
D806 D860 D861		
D862 D863 D864		
D901 D951 D952		
D953 D954		
D482 D491 D755	360K1032	DIODE 1SS82-TA
D756 D757 D758		
D759 D760 D761		
D762 D763 D902		
ZD801	360K3087	DIODE RD3.0EB-T4
ZD860	360K3114	DIODE 8.2EB(1)
ZD452	360K3118	DIODE,RD10EB(1)-T4
⚠ZD653	360K3123	DIODE RD20EB(3)
⚠ZD652	360K3124	DIODE RD8.2EB (3)-T4
ZD471 ZD5A1 ⚠ZD5E1	360K3134	DIODE RD15EB(2)-T4
ZD571		
ZD5R1	360K3145	DIODE RD27EB-T4
ZD5A0	360K3151	DIODE RD5.1EB(3)-T4
ZD503	360K3160	DIODE RD8.2EB(2)-T4
ZD5R2	360K3161	DIODE RD12EB(2)-T4
ZD8A3	360K3169	DIODE RD6.2EB(2)-T4

SYMBOL	PARTS NO	DESCRIPTION
ZD461 ZD561 ZD591	360K3170	DIODE RD6.2JSB(2)/JSAB(2)
ZD592		
ZD502	360K3188	DIODE RD3.9EB(2)-T4
ZD711 ZD712 ZD713	360K3300	DIODE RD2.0EB(1)-T4
ZD5A2	360K3326	DIODE RD18EB(3)-T4
ZD501	360K3403	DIODE RD5.1JSB(1)-T4
⚠ZD2001 ⚠ZD2002	360K3416	DIODE RD5.1JSB(2)-T4
ZD951	360K3605	DIODE RD2.2ESB(1)-T4
ZD401	360K3617	DIODE RD3.3ESB(1)-T4
ZD5G2	360K3624	DIODE RD3.9ESB(2)-T4
ZD8A4	360K3634	DIODE RD5.1ESB(1)-T4
⚠ZD5E0	360K3635	DIODE RD5.1ESB(2)-T4
ZD803	360K3637	DIODE RD5.6ESB-T4
⚠ZD2101	360K3647	DIODE RD6.8ESB(2)-T4
ZD5G0 ZD710 ZD8A1	360K3654	DIODE RD8.2ESB(1)-T4
⚠ZD5D1	360K3655	DIODE RD8.2ESB(2)/ESAB(2)
ZD5G3	360K3656	DIODE RD8.2ESB(3)-T4
ZD5G1	360K3658	DIODE RD9.1ESB(1)-T4
⚠ZD5E4	360K3675	DIODE RD13ESB(2)-T4
⚠ZD5E2	360K3680	DIODE RD15ESB(3)-T4
ZD8A2	360K3683	DIODE RD16ESB(2)-T4
⚠ZD651	360K3721	DIODE RD36ESB(3)-T4
⚠D602	361K7303	DIODE EU02 V1
⚠D5A2	361K7312	DIODE EP01C-V
⚠D604	361K7322	DIODE EL1Z-T
⚠D5E2 ⚠D5E4 ⚠D572	361K7562	DIODE EGP10G G23
D590 D8A9 D8C0		
D5M5	361K7637	DIODE EGP20G G23
MD801 MD802	361K8233	DIODE DAN209S-TP
⚠D603	36107174	DIODE RU1P
⚠D656	36107178	DIODE RU3
D573 D574 D8A7	36107293	DIODE RK14
⚠D651 ⚠D652	36107320	DIODE FMG-G26S
⚠D5D1 ⚠D5E3	36107541	DIODE EG01A
⚠D583 ⚠D584	36107560	DIODE RG2A2
D5G7	36107638	DIODE EGP30G
⚠D653	36108072	D,NETWORK D5LCA20
⚠D582	36108238	DIODE FMP-G3FS
ZD802	367K0017	DIODE RD4.7EB-T4
ZD861	367K0048	DIODE RD5.1FB(2)
D120	36801340	LED SLR-34MC3F
D121 D122	36801343	LED SLA-570MT3F(XJ,XK,XL)
⚠D601	36808230	DIODE RBV-1506
D402 D481 D5G3	369K2136	DIODE RGP10G,AT
D5G8 D731 D732		
D8C3 D8C4		
ZD451	369K5512	DIODE,ZENER RD18JSB2
⚠TH601	38102046	THERMISTOR 902P61D050MP14
⚠PC601 ⚠PC602	38200234	IC PC817C/D

*** TRANSFORMERS ***

SYMBOL	PARTS NO	DESCRIPTION
T571	45804008	TRANS,H.DRIVE
L5M1	46206005	TRANS,CHOKE 4MH
L5G1	46206006	TRANS,CHOKE 2MH
T5G0 T5M0	46302105	TRANS,FERRITE
T8A1	46304111	TRANS,CONVERTER

SYMBOL	PARTS NO	DESCRIPTION
⚠T601	46311115	TRANS,SWITCHING W328
⚠T5A1	47105678	F.B.T.(SR)
⚠T581	47710017	TRANS,H.OUTPUT

*** VARIABLE RESISTORS ***

SYMBOL	PARTS NO	DESCRIPTION
VR8A1	410G1207	R,VARIABLE B1.0K
VR701 VR702 VR703	410G1210	R,VARIABLE B3.3K
VR861	410G1211	R,VARIABLE B4.7K
VR860	410G1213	R,VARIABLE B10K
VR801 VR802	410G1415	R,VARIABLE B22K-T
VR101 VR102	41011106	R,VARIABLE B10K-V
VR411	41085005	R,VARIABLE B1K
VR401 VR421 VR590 VR951	41085009	R,VARIABLE B10K
VR441 VR56A	41085012	R,VARIABLE B50K
VR431 VR56C VR56E VR901 VR952	41085014	R,VARIABLE B200K
VR461	41085056	R,VARIABLE B2K
VR5U1 VR5W1	41085059	R,VARIABLE B10K
VR5S2	41085066	R,VARIABLE B500K
VR720 VR721 VR722 VR723 VR724 VR725	415K5159	R,VARIABLE B20K
⚠VR5D1	41505005	R,VARIABLE B2K
⚠VR2001 ⚠VR5E1	41505007	R,VARIABLE B5K
⚠VR651	41505103	R,VARIABLE B500

*** RELAYS & SWITCHES ***

SYMBOL	PARTS NO	DESCRIPTION
SW111 SW401	65161048	SWITCH,SLIDE
SW112	65161059	SWITCH,SLIDE 1-6L-3NS
SW701	65161062	SWITCH,SLIDE 2-6L-2NS
SW101 SW102 SW103 SW104 SW105 SW106 SW107 SW108 SW109 SW110	653F0031	SWITCH,PUSH BUTTON
	65360029	SWITCH,PUSH BUTTON
RL590 RL591	65660004	RELAY G6C-1114P-US
⚠RL601	65660019	RELAY G5P-1(24V)

*** COILS & FILTERS ***

SYMBOL	PARTS NO	DESCRIPTION
MR802	390C0151	R,NETWORK 8*10K 5% 1/8W
MR801	390C9804	R,NETWORK
MR803 MR804 MR805 MR806 MR807	390C9805	R,NETWORK 4*1.0K 5% 1/6W
MC801 MC802 MC803 MC804	39013042	C,CERAMIC 25V 0.01UF
⚠L591 ⚠L592	60919121	COIL,H.LIN. N-59 (16T)
⚠L590	60919122	COIL,H.LIN. N-60 (10T)
L5S1	610E1717	COIL,FILTER 10UH
L710 L711 L712	610E1726	COIL,FILTER 56UH
⚠L602	610F5002	FERRITE BEADS (B-02-RT)
L720 L721 L722	610F6014	COIL,FILTER 5.6UH
L901 L902 L903	610F7619	COIL,FILTER 0.15UH
L8A5	61055001	COIL,FILTER 8500UH
⚠FL601	61062171	LINE FILTER (4.3A 2.7MH)
	61062178	POWER LINE FILTER
⚠L5M0 L8A1 L8A2	61064006	COIL,FILTER 50UH

SYMBOL	PARTS NO	DESCRIPTION
⚠L594	61070135	FILTER CHOKE 4MH
⚠L601	61072349	COIL,FILTER
L704	61099011	COIL,CHOKE 33UH
⚠L653	61099013	COIL,CHOKE 10UH
⚠L652	61099014	COIL,CHOKE 33UH
⚠L593	61099019	COIL,CHOKE 10MH
⚠L651	61099036	FILTER CHOKE
L8A3	61099047	FILTER CHOKE
DEG	61321104	COIL,DEGAUSSING
LC901	616K6028	NOISE FILTER 1H223X-TA
LC701 LC702 LC703 LC704	616K6801	NOISE FILTER 2R2-101-T
LC711 LC712 LC713 LC714 LC715 LC902	616K6946	NOISE FILTER TH28123MA
LC708 LC709 LC710	616K6964	NOISE FILTER TX07250NBT
LC705 LC706 LC707	616K6965	NOISE FILTER TX09500NBT

*** PWB ASSYS ***

SYMBOL	PARTS NO	DESCRIPTION
	84N67A01	SW.REG PWB ASSY
	84N68C01	VIDEO PWB ASSY
	84N68D01	DEF PWB ASSY
	84N68J01	CRT PWB ASSY
	84N68M03	CPU PWB ASSY
	84N68S02	SDP PWB ASSY
	84N68T02	TR PWB ASSY

*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***

SYMBOL	PARTS NO	DESCRIPTION
HS2	31709105	SHEET,HEAT SINK
HS1	31709204	SHEET,HEAT SINK
HS582	31709503	SHEET,INSULATOR
HS581	31709507	SHEET,INSULATOR HEAT SINK
HS3	31709612	SHEET INSULATOR M-45
HS5A4	31709614	SHEET,INSULATOR M-45
SG901 SG902 SG903 SG904	329J0047	ARRESTER (300V),AT52
X801	64098031	X'TAL 12000KHZ
⚠F651	66653017	FUSE 125V 4A-UC
⚠F601	66653052	FUSE MF51NM125V6.3A-UC
SG951	667K7001	SPARK GAP 1.2KV
SG905	66706002	SPARK GAP 1.5KV
	70032054	SG/CRT SOCKET(DBF)
	70051321	RECEPTACLE 1P
CN-D2	70056398	MINI D-SUB COCKET 15PV
CN-D1	70056399	D-SUB SOCKET 15PV
	70810757	LINE CORD 3P L=1.8
	71205037	HOLDER,FUSE
	73893105	CABLE,SIGNAL D15P-MD15P
	74004891	CAP
	79692941	FG-ACC-P
	79692951	FG-ACC-M

*** APPEARANCE PARTS ***

SYMBOL	PARTS NO	DESCRIPTION
	25282981	SCREW REVET
	25283511	JOINT
	25314001	CABINET FRONT ASSY

SYMBOL	PARTS NO	DESCRIPTION
	25314021	CABINET BACK(A) ASSY
	25314041	CABINET BACK(B) ASSY
	25314062	CABINET BOTTOM
	25419341	HOOK (B)
	25419402	REVOLVING SPINDLE
	25419491	ESCUTCHEON
	25419501	REVOLVING STAND ASSY
	25421111	LID CONTROL ASSY
	25534631	COIL SPRING
	25607291	SLIDE SHEET
	25612281	FOOT RUBBER (D21)
	25757643	LABEL(REV.)
	25775021	NAME PLATE,INSTRUCTION
	25775701	LABEL (CONTROL)
*** KNOBS & PUSH BUTTONS ***		
	25454691	KNOB,SLIDE
	25454741	PUSH BUTTON (SW)
	25454752	KNOB,CONTROL
*** PRINTED & PACKING MATERIALS ***		
	24L13513	**CARD, DHHS-NEC**
	24M02911	**BAG, POLYETHYLENE (DHHS)**
	24813191	BAG,POLYETHYLENE(150*370)
	24814531	BAG,POLYEHYLENE (180*350)
	25815061	BAG,POLYETHYLENE (270X370
	25822831	SHEET PROTECTION
	25823512	CARTON BOX(B)
	25823522	FILLER T,CARTON
	25823532	FILLER B,CARTON
	25826323	CARTON BOX(T)(JC-2141UMA)
	25826571	CORNER ANGLE
	78034298	MONITOR QUESTIONNAIRE
	78034407	**MONITOR SALES OFFICE LIST**
	78126002	USER'S MANUAL (5FG/6FG)A
	78652202	TEMPLATE A
*** RESISTORS ***		
R406	401C6609	R,CARBON 2.2H 5% 1/4W
R583 R584	401C6651	R,CARBON 120H 5% 1/4W
⚠R668	401C6657	R,CARBON 220H 5% 1/4W
⚠R667 R834	401C6665	R,CARBON 470H 5% 1/4W
R124	401C6667	R,CARBON 560H 5% 1/4W
R5R6	401C6669	R,CARBON 680H 5% 1/4W
R578	401C6677	R,CARBON 1.5K 5% 1/4W
R911	401C6689	R,CARBON 4.7K 5% 1/4W
⚠R5E8	401C6691	R,CARBON 5.6K 5% 1/4W
⚠R5AA ⚠R5AC	401C6745	R,CARBON 1.0M 5% 1/4W
R8C4	401C6761	R,CARBON 4.7M 5% 1/4W
⚠R5GA	401G6127	R,CARBON 12H 5% 1/4W
⚠*R491*	*401G6173*	R,CARBON 1.0K 5% 1/4W
⚠R5N4	401G6185	R,CARBON 3.3K 5% 1/4W
⚠R5D4	401G6191	R,CARBON 5.6K 5% 1/4W
⚠R5A9	401G8137	R,CARBON 33H 5% 1/2W

SYMBOL	PARTS NO	DESCRIPTION
R904 R905 R906	401H5645	R,CARBON 68H 5% 1/2W
R790 R791 R792	401H5657	R,CARBON 220H 5% 1/2W
R725 R726 R727	401H5661	R,CARBON 330H 5% 1/2W
⚠R619	401H5667	R,CARBON 560H 5% 1/2W
R985	401H5677	R,CARBON 1.5K 5% 1/2W
R8A4	401H5681	R,CARBON 2.2K 5% 1/2W
R8A1	401H5683	R,CARBON 2.7K 5% 1/2W
⚠R655	401H5705	R,CARBON 22K 5% 1/2W
⚠R601	401H5729	R,CARBON 220K 5% 1/2W
R974 R975	401H5731	R,CARBON 270K 5% 1/2W
⚠R603	401H5737	R,CARBON 470K 5% 1/2W
⚠R5N5	401H5741	R,CARBON 680K 5% 1/2W
⚠R5E7 R524 R7F4	401J9820	RD16Z,0H,AT52
R7F5 R8F9 R865		
R50F R51C R54F	401K5601	R,CARBON 1H 5% 1/6W
R56X		
R5K6 R909	401K5633	R,CARBON 22H 5% 1/6W
R7C0 R7C1 R7C2	401K5639	R,CARBON 39H 5% 1/6W
R5N2	401K5641	R,CARBON 47H 5% 1/6W
R8D0	401K5643	R,CARBON 56H 5% 1/6W
R970	401K5647	R,CARBON 82H 5% 1/6W
⚠R2011 R408 R57E	401K5649	R,CARBON 100H 5% 1/6W
R59A R59C R59E		
R59F R59G R59W		
⚠R662 R7A0 R7A1		
R7A2 R7G1 R750		
R751 R752 R910		
R966		
R719 R720 R721	401K5653	R,CARBON 150H 5% 1/6W
R722 R723 R724		
R760 R761 R762		
R784 R785 R786		
R110 R8E7	401K5655	R,CARBON 180H 5% 1/6W
R56S ⚠R615 R8F4	401K5657	R,CARBON 220H 5% 1/6W
R2102 R513 R802	401K5659	R,CARBON 270H 5% 1/6W
R56M R58C R7G0	401K5661	R,CARBON 330H 5% 1/6W
R7A3 R7A5 R7A7	401K5663	R,CARBON 390H 5% 1/6W
R781 R782 R783	401K5665	R,CARBON 470H 5% 1/6W
R8C6		
R596 R598 R8L3	401K5667	R,CARBON 560H 5% 1/6W
R121 ⚠R672 R756	401K5669	R,CARBON 680H 5% 1/6W
R757 R758 R8E6		
R8H0		
R775 R777 R779	401K5671	R,CARBON 820H 5% 1/6W
R111 R409 R454	401K5673	R,CARBON 1.0K 5% 1/6W
R455 R5A8 ⚠R5EA		
⚠R5E4 ⚠R5E5 R5W4		
R5W5 R516 R53L		
R535 ⚠R605 ⚠R674		
R738 R787 R788		
R789 R8K8 R8K9		
R810 R811 R832		
R857 R858 R859		
R86A R86C R871		
R873 R877 R878		
R879 R880 R882		
R956 R957		
R511 ⚠R659 R8H6	401K5675	R,CARBON 1.2K 5% 1/6W
R8H8		

SYMBOL			PARTS NO	DESCRIPTION
R474	R5A7	⚠R5D3	401K5677	R,CARBON 1.5K 5% 1/6W
R528	⚠R657	⚠R658		
R8G9	R8H2			
R5R5	R793	R971	401K5679	R,CARBON 1.8K 5% 1/6W
R407	R466	R57K	401K5681	R,CARBON 2.2K 5% 1/6W
R7G2	R7G3	R731		
R732	R735	R736		
R737	R739	R8C1		
R8C2	R816	R983		
R5A0	R5A4	R5A5	401K5683	R,CARBON 2.7K 5% 1/6W
⚠R5E0	R5U7	R8H7		
R801	R870	R876		
⚠R201G	R411	R5X6	401K5685	R,CARBON 3.3K 5% 1/6W
R52F	R59L	R59S		
R59T	R590	R595		
R597	R707	R709		
R711	R713	R715		
R717	R776	R778		
R780	R8G4	R8G5		
R8G6	R8G7	R8G8		
R8H1	R8H5	R8H9		
R8L0	R8L1	R863		
R872	R965			
R463	R5K5	R5N0	401K5687	R,CARBON 3.9K 5% 1/6W
R50K	R51K	R52K		
R53K	R54K	R55K		
R58K	R7A4	R7A6		
R7A8	R7G4	R8E0		
⚠R201M	R401	R462	401K5689	R,CARBON 4.7K 5% 1/6W
R5H1	R5R4	R533		
⚠R663	R763	R8K4		
R8K5	R866			
⚠R2006	R465	⚠R5D2	401K5691	R,CARBON 5.6K 5% 1/6W
⚠R5E1	⚠R5E9	R5Y4		
R520	R7C4	R7C6		
R7C8	R8E1	R8G0		
R8G2	R8K0	R8K1		
R8K2				
R120	⚠R201H	R5G1	401K5693	R,CARBON 6.8K 5% 1/6W
R5G5	R5K7	R5M0		
R5N1	R5T6	R514		
R745	R803	R818		
R5H4	R7E2	R7E3	401K5695	R,CARBON 8.2K 5% 1/6W
R7E4	R8A9	R862		
R864	R869			
⚠R2007	⚠R201K	⚠R2010	401K5697	R,CARBON 10K 5% 1/6W
⚠R2020	R464	R475		
R5G2	R5M8	R5S3		
R5S4	R5T1	R5T2		
R5T4	R5U0	R5U2		
R5U3	R5X1	R5X4		
R5Y3	R50M	R504		
R505	R515	R526		
R527	R529	R53S		
R544	R569	⚠R652		
R7E5	R7E6	R7E7		
R7F3	R708	R710		
R712	R714	R716		
R718	R742	R744		
R764	R765	R766		
R767	R768	R769		
R772	R773	R774		
[illegible]	[illegible]	[illegible]		

SYMBOL			PARTS NO	DESCRIPTION
R8C7	R8F8	R805	401K5697	R,CARBON 10K 5% 1/6W
R807	R808	R809		
R850	R851	R852		
R867	R868	R874		
R884	R907	R913		
R951	R952	R979		
R982	R984	R987		
⚠R2013	R402	R420	401K5699	R,CARBON 12K 5% 1/6W
⚠R5E2	R5G4	R5R0		
R5R7	R512	R523		
R59N	R741	R743		
R886	R964			
R2104	R421	R5H0	401K5701	R,CARBON 15K 5% 1/6W
⚠R614	⚠R670	R8A5		
R8A6	R8K3	R817		
R5X7			401K5703	R,CARBON 18K 5% 1/6W
⚠R201L	R404	R5H5	401K5705	R,CARBON 22K 5% 1/6W
R5M2	R5T7	R5U9		
R5W9	R522	⚠R613		
⚠R660	R7F0	R7F1		
R7F2	R730	R734		
R8A8	R8C3	R8K6		
R976	R978			
R424	R451	R5T3	401K5707	R,CARBON 27K 5% 1/6W
R5U6	R5Y6	R50T		
R52T	R53T	R54T		
R55T	R58T	R981		
R989				
⚠R2012	R2101	R423	401K5709	R,CARBON 33K 5% 1/6W
R5C4	⚠R5D5	R5H8		
R5M6	R503	R509		
R531	R532	R534		
R568	R7D9	R7E0		
R7E1	R853	R854		
R855	R856	R885		
R955	R962			
⚠R200A	⚠R200C	⚠R201E	401K5711	R,CARBON 39K 5% 1/6W
R422	R443	R482		
R837				
R5A3	R5H2	R5H3	401K5713	R,CARBON 47K 5% 1/6W
R5S8	R5T0	⚠R669		
R7C3	R7C5	R7C7		
R806	R914	R954		
R980				
⚠R200F	R436	R437	401K5715	R,CARBON 56K 5% 1/6W
R483	R5M7	R56G		
R56H	R8F2	R958		
R960				
R450	R5S7	R5S9	401K5717	R,CARBON 68K 5% 1/6W
R5Y5	R502	⚠R671		
R5H7	R5T8	R56T	401K5719	R,CARBON 82K 5% 1/6W
R59M	R7D6	R7D7		
R7D8	R835			
⚠R2008	⚠R201F	R431	401K5721	R,CARBON 100K 5% 1/6W
R433	R434	R435		
R452	R453	R5G7		
R5U1	R5U8	R5W2		
R5W3	R5X5	R56C		
R58H	⚠R620	R8H3		
R961	R986			
R484	R5K3	R5M3	401K5723	R,CARBON 120K 5% 1/6W
R56A	R56F	R953		

SYMBOL			PARTS NO	DESCRIPTION
⚠R2009	R5S6	R56E	401K5725	R,CARBON 150K 5% 1/6W
R7D3	R7D4	R7D5		
R50H	R50L	R8A7	401K5727	R,CARBON 180K 5% 1/6W
R5G8	R5W0	R7D0	401K5729	R,CARBON 220K 5% 1/6W
R7D1	R7D2	R8G1		
R8G3	R8K7	R988		
R438	R56W	R836	401K5731	R,CARBON 270K 5% 1/6W
R5N7	R7F6	R7F7	401K5733	R,CARBON 330K 5% 1/6W
R7F8				
R51H			401K5735	R,CARBON 390K 5% 1/6W
R5G3	R52H	R912	401K5737	R,CARBON 470K 5% 1/6W
R959				
R53H	R8C5		401K5743	R,CARBON 820K 5% 1/6W
R5G9	R5M5	R54H	401K5745	R,CARBON 1.0M 5% 1/6W
R8C8				
R55H			401K5747	R,CARBON 1.2M 5% 1/6W
R492	R908		401K5749	R,CARBON 1.5M 5% 1/6W
⚠R201D	⚠R210C		401K5753	R,CARBON 2.2M 5% 1/6W
R501			401K5757	R,CARBON 3.3M 5% 1/6W
R5G6			40175101	R,CARBON 1H 5% 1/4W
⚠R5C1	⚠R5C2	⚠R612	40175125	R,CARBON 10H 5% 1/4W
⚠R5M1			40175127	R,CARBON 12H 5% 1/4W
⚠R611			40175145	R,CARBON 68H 5% 1/4W
R581	R582		40298004	R,WIRE 1.0H 1% 5W
⚠R602			40299104	R,WIRE 10H 5% 5W
R8F6			403F1121	R,METAL OXIED 6.8H 5% 1W
R8F7			403F1131	R,METAL OXIED 18H 5% 1W
⚠R57T			403F1137	R,METAL 33H 5% 1W
R405			403F1165	R,METAL 470H 5% 1W
R5A6	⚠R5E3		403F1173	R,METAL OXIED 1.0K 5% 1W
R5A1			403F1177	R,METAL OXIDE 1.5K 5% 1W
R410			403F2101	R,METAL 1.0H 5% 2W
R8F0			403F2103	R,METAL OXIDE 1.2H 5% 2W
R8F3			403F2109	R,METAL 2.2H 5% 2W
R8F5			403F2113	R,METAL OXIDE 3.3H 5% 2W
R883			403F2149	R,METAL OXIDE 100H 5% 2W
R7G5	R8E4	R8E5	403F2151	R,METAL OXIDE 120H 5% 2W
R476	R477		403F2169	R,METAL OXIDE 680H 5% 2W
R519			403F2171	R,METAL 820H 5% 2W
R8F1			403F3137	R,METAL OXIDE 33H 5% 3W
⚠R599			403F3141	R,METAL OXIDE 47H 5% 3W
R456	R457		403F3143	R,METAL OXIDE 56H 5% 3W
R861			403F3159	R,METAL OXIDE 270H 5% 3W
R521			403F3163	R,METAL OXIDE 390H 5% 3W
⚠R5D6			403F3173	R,METAL OXIDE 1.0K 5% 3W
⚠R57V			403F3177	R,METAL OXIDE 1.5K 5% 3W
R967	R968		403F3209	R,METAL OXIDE 33K 5% 3W
⚠R5D7			40318994	R,METAL 2.2K 5% 5W
⚠R656			40372135	R,METAL 27H 5% 2W
⚠R604			40372151	R,METAL 120H 5% 2W
⚠R666			40372175	R,METAL 1.2K 5% 2W
⚠R601			40372191	R,METAL 5.6K 5% 2W
⚠R665			40372197	R,METAL 10K 5% 2W
⚠R606	*⚠R664*		*40372213*	*R,METAL 47K 5% 2W*
⚠R608	⚠R609		40372329	R,METAL 0.22H 5% 2W

SYMBOL			PARTS NO	DESCRIPTION
⚠R651	⚠R654		40373135	R,METAL 27H 5% 3W
⚠R610			40373149	R,METAL 100H 5% 3W
⚠R616	⚠R617		40373209	R,METAL 33K 5% 3W
R8E8			40399049	R,METAL 82H 5% 3W
R701	R702	R703	404C1646	R,METAL 75H 1% 1/6W
R704	R705	R706		
R795	R796	R797	404C1653	R,METAL 150H 1% 1/6W
R50C			404C1675	R,METAL 1.2K 1% 1/6W
⚠R2018			404C1677	R,METAL 1.5K 1% 1/6W
R58F			404C1681	R,METAL 2.2K 1% 1/6W
R122	R537	⚠R661	404C1683	R,METAL 2.7K 1% 1/6W
R5A2			404C1685	R,METAL 3.3K 1% 1/6W
R51F	R58A	⚠R653	404C1689	R. METAL 4.7K 1% 1/6W
R123			404C1691	R,METAL 5.6K 1% 1/6W
R403	R8H4		404C1694	R,METAL 7.5K 1% 1/6W
R52C			404C1695	R,METAL 8.2K 1% 1/6W
⚠R2019	R5X0	R50A	404C1697	R,METAL 10K 1% 1/6W
R56R	R729	R8E2		
R8E3	R840	R843		
R846	R849			
R472	R53C	R58G	404C1699	R,METAL 12K 1% 1/6W
R5S5	R50G	R536	404C1703	R,METAL 18K 1% 1/6W
R576	R579			
R5F4	R51G	R53F	404C1705	R,METAL 22K 1% 1/6W
R538	R573	R577		
R425	R51A	R54C	404C1707	R,METAL 27K 1% 1/6W
R52G	R55C		404C1709	R,METAL 33K 1% 1/6W
R5U4	R5U5		404C1710	R,METAL 36K 1% 1/6W
R447	R52A	R53G	404C1711	R,METAL 39K 1% 1/6W
R55F				
R471	R5S0		404C1713	R,METAL 47K 1% 1/6W
R445	R5X2	R5X3	404C1715	R,METAL 56K 1% 1/6W
R56L	R572			
R426	R429	R5F3	404C1717	R,METAL 68K 1% 1/6W
R510	R57A			
R473			404C1719	R,METAL 82K 1% 1/6W
⚠R2001	R5F8	R5S1	404C1721	R,METAL 100K 1% 1/6W
R5S2	R5X9	R5Y1		
R5Y2	R50E	R507		
R51E	R52E	R53A		
R53E	R54E	R54G		
R55E	R56K	R58E		
R838	R841	R844		
R847				
R55G	R574		404C1723	R,METAL 120K 1% 1/6W
R839	R842	R845	404C1724	R,METAL 130K 1% 1/6W
R848				
R5N9	R54A		404C1725	R,METAL 150K 1% 1/6W
R428	R440	R442	404C1727	R,METAL 180K 1% 1/6W
R446	R5X8	R508		
R430	R444	R506	404C1729	R,METAL 220K 1% 1/6W
R55A	R571	R575		
R427			404C1737	R,METAL 470K 1% 1/6W
R441			404C1743	R,METAL 820K 1% 1/6W
R439			404C1745	R,METAL 1.0M 1% 1/6W
⚠R5C3	⚠R5D1	⚠R5F9	404K5109	R,METAL 2.2H 5% 1/4W
⚠R57H	⚠R570			

SYMBOL			PARTS NO	DESCRIPTION
⚠R461	⚠R591		404K5117	R,METAL 4.7H 5% 1/4W
⚠R481	⚠R5F2	⚠R860	404K5125	R,METAL 10H 5% 1/4W
⚠R5F0	⚠R57F	⚠R57L	404K5141	R,METAL 47H 5% 1/4W
⚠R5R8			40405125	R,METAL 10H 5% 1/4W
⚠R5N3			408A8107	R,FUSE 1.8H 5% 1/2W
⚠R592	⚠R593	⚠R594	408A8157	R,FUSE 220H 5% 1/2W
⚠R57G			409A6149	R,FUSE 100H 5% 1/4W

*** CAPACITORS ***

SYMBOL			PARTS NO	DESCRIPTION
C903			420C9551	C,CERAMIC 500V 100PF
C481	C5G8	⚠C591	420C9563	C,CERAMIC 500V 1000PF
⚠C592	⚠C593	C7A6		
C7A7	C7A8	C904		
C574			420C9567	C,CERAMIC 500V 2200PF
C7E9	C796	C797	420C9569	C,CERAMIC 50V 3300PF
C798				
⚠C609			420EC067	C,CERAMIC 400V 2200PF
C901			4203J575	C,CERAMIC 500V 0.01UF
C905			42040108	C,CERAMIC 2KV 0.01UF
⚠C603	⚠C604		42053013	C,CERAMIC 400V 1000PF
⚠C658			42099086	C,CERAMIC 2KV 1000PF
⚠C611	⚠C618		42099088	C,CERAMIC 2KV 220PF
⚠C651	⚠C655		42099095	C,CERAMIC 2KV 330PF
⚠C607	⚠C614		42099096	C,CERAMIC 2KV 470PF
C451	C518	C521	421A0425	C,CERAMIC 50V 0.01UF
C530	C57A	C810		
C811				
C5R1			421C0205	C,CERAMIC 50V 220PF
C401	C762	C763	421C0213	C,CERAMIC 50V 1000PF
C764	C777	C778		
C779	C8A9	C867		
C737	C738	C739	421C0219	C,CERAMIC 50V 3300PF
C5G1	C7D4	C7D5	421C0225	C,CERAMIC 50V 0.01UF
C7D6	C707	C708		
C709	C710	C711		
C712	C718	C719		
C720	C759	C760		
C761	C768	C769		
C770	C784	C785		
C786	C790	C791		
C792				
C86A	C86C		421C3461	C,CERAMIC 16V 0.01UF
C5S1	C5S8	C5S9	421D6009	C,CERAMIC 25V 0.1UF
C5T0	C5T1	C5T2		
C5X0	C504	C59E		
C59F	C59G	C59H		
C59K	C59M	C7E5		
C7E6	C7E7	C7E8		
C7F0	C7F1	C7F2		
C714	C716	C753		
C754	C755	C8A8		
C8H7	C8K3	C8K4		
C8K7	C8K8	C8K9		
C802	C826	C827		
C829	C830	C834		
C835	C864	C865		
C868	C869	C870		
C958	C965			

SYMBOL			PARTS NO	DESCRIPTION
C200P	C2021	C406	421D6013	C,CERAMIC 50V 0.1UF
C47P	C471	C5A5		
C5EP	C50A	C50R		
C50S	C507	C51C		
C51P	C56A	C56C		
C57P	C8C7	C8C8		
C5X1			421J9036	C,CERAMIC 25V 0.1UF
C8A1			423A1028	C,CERAMIC 50V 20PF
C509	C717		423A1045	C,CERAMIC 50V 100PF
C5G3	C8G9	C8K0	423A1057	C,CERAMIC 50V 330PF
C8K1	C8K2			
⚠C616			423A1100	C,CERAMIC 50V 390PF
C5G5	C5M0	C8K5	423A1101	C,CERAMIC 50V 470PF
C962				
C959			423A1103	C,CERAMIC 50V 560PF
C7D1	C7D2	C7D3	423A2015	C,CERAMIC 50V 10PF
C804	C805			
C820			423A2025	C,CERAMIC 50V 15PF
C5G0	C506	C787	423A2033	C,CERAMIC 50V 33PF
C788	C789			
⚠C5E2			423A2037	C,CERAMIC 50V 47PF
C781	C782	C783	423A2043	C,CERAMIC 50V 82PF
C529	C549	C966	423A2045	C,CERAMIC 50V 100PF
C5M5	C502	C510	423A2103	C,CERAMIC 50V 180PF
C511			423A2105	C,CERAMIC 50V 270PF
C515			427A7005	C,FILM 100V 0.0022UF
C8A6			427F4004	C,FILM 50V 1800PF
C8A7	C8H0		427F4009	C,FILM 50V 4700PF
⚠C5EA	⚠C5E6	C500	427F4013	C,FILM 50V 0.01UF
C8A5	C951	C957		
C516			427F4014	C,FILM 50V 0.012UF
C5G6			427F4021	C,FILM 50V 0.047UF
C5M2			427F4025	C,FILM 50V 0.1UF
⚠C5D2			427F4059	C,FILM 50V 4700PF
C412			427F4067	C,FILM 50V 0.022UF
C5G2			427F4601	C,FILM 50V 1000PF
C513			427F4603	C,FILM 50V 1500PF
C8D0			427F4605	C,FILM 50V 2200PF
C520			427F4610	C,FILM 50V 5600PF
C59N			427F4613	C,FILM 50V 0.01UF
C866			427F4617	C,FILM 50V 0.022UF
C5H7	C5H8	C5M4	427F4621	C,FILM 50V 0.047UF
C5M8				
⚠C661			427F4624	C,FILM 50V 0.082UF
C512	C578		427F4651	C,FILM 50V 1000PF
C955	C956	C963	427F4675	C,FILM 50V 0.1UF
C5A2	C5A3		427J9112	C,FILM 50V 1000PF
⚠C5D1			42703455	C,FILM 630V 2200PF
⚠C577			42703575	C,FILM 200V 0.1UF
⚠C664			42799057	C,FILM 100V 3300PF
C441	C442	⚠C606	428B3013	C,METAL FILM 50V 0.1UF
⚠C662	C8G0	C8G2		
C402	⚠C5D3		428B3021	C,METAL FILM 50V 0.47UF
C50C	C8A2	C8D1	428B3025	C,METAL FILM 50V 1.0UF
⚠C613			428B3101	C,METAL FILM 50V 0.010UF
⚠C5E8	C5GE		428CJ022	C,METAL FILM 250V 0.1UF

SYMBOL	PARTS NO	DESCRIPTION
⚠C666 ⚠C667	428D0053	C,METAL 100V 0.1UF
C7A0 C7A1 C7A2	428D0097	C,FILM 250V 0.22UF
C907		
C409	428D4317	C,METAL FILM 100V 0.22UF
⚠C5A8 C964	428JJ115	C,METAL 1000V 0.047UF
C960	42808501	C,METAL FILM 1.6KV 1000PF
⚠C654	42809001	C,METAL FILM 100V 0.01UF
⚠C581	42817101	C,METAL 1600V 1500PF
⚠C5A6	42817103	C,METAL FILM 2.0KV 1700PF
⚠C582	42817201	C,METAL 1600V 6200PF
⚠C610	42839022	C,METAL FILM 250V 0.1UF
⚠C59A ⚠C599	42839602	C,METAL 400V 0.12UF
⚠C598	42839604	C,METAL 400V 0.18UF
⚠C596	42839610	C,METAL 400V 0.39UF 5%
⚠C595	42839613	C,METAL 400V 0.56UF
⚠C597	42839631	C,METAL FILM 400V 0.6UF
⚠C59C	42839707	C,METAL 400V 0.27UF 5%
⚠C601	42898001	C,FILM AC250V 0.22UF
⚠C602 ⚠C619	42899098	C,FILM 250V 0.1UF
C7C6	430BJ518	C,ELEC 160V 33UF
C771 C772 C773	430B3104	C,ELEC 50V 3.3UF
C801	430B6017	C,ELEC 10V 220UF
⚠C2004 ⚠C2006 C733	430B6029	C,ELEC 16V 100UF
C734 C735 C969		
C5S6 C5S7 C508	430B6030	C,ELEC 16V 220UF
C724 C725 C726	430B6032	C,ELEC 16V 470UF
C736		
C5G9	430B6039	C,ELEC 25V 22UF
⚠C2002 C472 C5A1	430B6041	C,ELEC 25V 47UF
C5S4 C5S5 C5X2		
C57C C722 C741		
C780 C8H8		
C461	430B6054	C,ELEC 35V 100UF
C8L0	430B6060	C,ELEC 50V 0.47UF
C5M7 C517 C8H9	430B6061	C,ELEC 50V 1.0UF
C5S2	430B6063	C,ELEC 50V 3.3UF
C5H0 C5H1 C5X3	430B6064	C,ELEC 50V 4.7UF
C501 C8G8 C8H2		
C8H6		
C462 ⚠C5E0 C5H2	430B6065	C,ELEC 50V 10UF
C7E0 C7E1 C7E2		
C727 C728 C729		
C730 C731 C732		
C756 C757 C758		
C8G4 C8H5 C8K6		
C871		
⚠C2008 C5C0 C5GC	430B6066	C,ELEC 50V 22UF
C572		
⚠C5E9	430B6068	C,ELEC 50V 47UF
C571	430B6069	C,ELEC 50V 100UF
C590	430B6096	C,ELEC 100V 3.3UF
C8H3	430B6221	C,ELEC 50V 0.1UF
⚠C5F1	430B6516	C,ELEC 160V 10UF
C482	430B6536	C,ELEC 200V 10UF
C833	430B8135	C,ELEC 10V 220UF
C713 C715	430B8144	C,ELEC 16V 47UF

SYMBOL	PARTS NO	DESCRIPTION
C803	430B8152	C,ELEC 25V 10UF
C5GA	430B8180	C,ELEC 50V 22UF
C863	430B9016	C,ELEC 10V 100UF
C503 C8C9 C831	430B9017	C,ELEC 10V 220UF
C861 C967 C968	430B9025	C,ELEC 16V 10UF
C765 C766 C767	430B9026	C,ELEC 16V 22UF
C952 C953 C961	430B9028	C,ELEC 16V 47UF
C8C3	430B9031	C,ELEC 16V 330UF
C750 C751 C752	430B9032	C,ELEC 16V 470UF
⚠C5E7	430B9039	C,ELEC 25V 22UF
C5A4 C862	430B9041	C,ELEC 25V 47UF
⚠C665	430B9053	C,ELEC 35V 47UF
C411	430B9054	C,ELEC 35V 100UF
⚠C660	430B9057	C,ELEC 35V 470UF
C408	430B9061	C,ELEC 50V 1.0UF
⚠C5E3 ⚠C612 ⚠C615	430B9065	C,ELEC 50V 10UF
C2101 ⚠C5E4 C5G4	430B9066	C,ELEC 50V 22UF
C5M1		
C407	430B9070	C,ELEC 50V 220UF
C405	430B9071	C,ELEC 50V 330UF
C7A3 C7A4 C7A5	430B9512	C,ELEC 160V 1.0UF
C793 C794 C795	430B9513	C,ELEC 160V 2.2UF
C5G7 ⚠C59L C7D7	430B9552	C,ELEC 250V 1 UF
C832	430C0253	C,ELEC 25V 22UF
C8C1 C8C2	430C2105	C,ELEC 25V 470UF
C774 C775 C776	430C8423	C,ELEC 16V 470UF
C491	430C9154	C,ELEC 350V 3.3UF
C8C5	430J8109	C,ELEC 16V 47UF
⚠C659 ⚠C663	4302J059	C,ELEC 35V 2200UF
⚠C652	4302J105	C,ELEC 100V 470UF
⚠C653	4302J559	C,ELEC 250V 47UF
C410	4303D185	C,ELEC 50V 1500UF
C5A9 C5M6 C5M9	4303J222	C,ELEC 250V 2.2UF
C5H6	4303J224	C,ELEC 250V 4.7UF
C8A3 C8A4	43032175	C,ELEC 50V 220UF
⚠C656 ⚠C657 ⚠C669	4304A013	C,ELEC 160V 100UF
C5H9	4309H105	C,ELEC 200V 4.7UF
⚠C5E5	4309H106	C,ELEC 250V 22UF
⚠C605	43198001	C,ELEC 200V 1200UF
C583	43198002	C,ELEC 200V 47UF
C8C4	432K6011	C,ELEC 10V 220UF
C8F0	432K6208	C,ELEC 63V 33UF
C5S3	433A3033	C,ELEC 25V 10UF
C8H4	433A3058	C,ELEC 50V 4.7UF
⚠C5MC	433A4025	C,ELEC 16V 47UF
C8G1 C8G3 C8H1	433A4056	C,ELEC 50V 22UF
C7C0 C7C1 C7C2	433A6045	C,ELEC 16V 22UF
C7C3 C7C4 C7C5		
C701 C702 C703		
C704 C705 C706		
⚠C5EC	433A7013	C,ELEC 16V 47UF
C514	435A8307	C,TANTALUM 35V 1.0UF

REPLACEMENT PARTS LIST

The components specified for Model JC-2141UMB.

Notes: The components identified by ⚠ mark are critical for safety.
Replace only with parts Number specified.

SYMBOL	PARTS NO	DESCRIPTION
*** CRT & TUNER ***		
⚠CRT	33021502	CRT AF21F9SLB22-E-TC42
*** ICS ***		
⚠IC5E1	370A1009	IC UPC1093J-T (REG)
IC811	370E6005	IC PST518A
IC503 IC8G0 IC8G2	37011018	IC UPC311C (COMP)
IC402 IC5G1	37011024	IC UPC3403C (OP-AMP)
⚠IC2001 ⚠IC2002	37011132	IC UPC4082C (OP-AMP)
IC471 IC5S2 IC506	37011206	IC XRA10358 (OP-AMP)
IC509 IC809 IC810		
IC863 IC951		
IC5S3 IC5S4 IC504	37011210	IC XRA10324 (Q OP-AMP)
IC806 IC807 IC808		
IC862 IC864		
⚠IC5E2 IC5G0 IC8A2	37011262	IC XRA10393 (COMP)
IC8G1		
IC431 IC505	37051036	MOS UPD4066BC
IC803	37051042	MOS UPD4028BC (BCD DECI)
IC8G5	37051096	IC SN74LS367AN (BUFF)
IC502 IC8G4	37051179	IC SN74LS123N (MONO MLT)
IC805	37053036	MOS SN74HC32N (OR)
IC5A1	37053390	MOS HD74HC123AP
IC804	37055401	MOS XRM93C56B-E
⚠IC501	37056295	IC LA7851
IC702 IC703 IC704	37056433	IC M51399P
IC5S1 IC952	37056618	IC BA6110
⚠IC601	37056810	IC M67297 (SW.REG CONT)
IC860 IC861	37056812	IC M62362P
IC802	37056813	IC M62359P
IC701	37056814	IC M52035P
IC8G3	37056867	IC M52036SP
IC5S5	37056877	IC NJM4200D (MULTIPLIER)
IC571 IC8A1	37056885	IC NJM3404AD
IC401	37056887	IC TDA1675A
IC705 IC706 IC707	37056905	IC VPA12H
IC801	37056915	IC UPD78C12AGQ-A66-36
IC510 IC511	37101543	IC XRA10339
*** TRANSISTORS ***		
⚠Q5M4	350A1500	TR 2SA1767-TA
⚠Q2002 Q421 Q462	350E3218	TR 2SC1740S-T R
Q5G2 Q5G4 Q5M1		
Q5R3 Q572 ⚠Q652		
⚠Q653 Q714 Q715		
Q716 Q8A2 Q8A4		
Q8A6 Q8A8 Q807		
Q861 Q862 Q952		
Q957		
Q701 Q702 Q703	350H1811	TR,2SC2901 K-T
Q704 Q705 Q706		
Q710 Q726 Q727		
Q728 Q731 Q733		
Q740 Q741 Q742	350H4417	TR,2SC1473-TA Q
Q7C0	350H5017	TR,2SC3811-TA Q
Q5A1 Q5R2 Q502	350H5018	TR,2SC3811-TA R
Q806		
Q954	350K4311	TR 2SA953-T K
⚠Q5E2	350K4411	TR 2SA952 K,AT
Q5A3	350K4412	TR 2SA952 L,AT
⚠Q2001 Q5G5 Q5M2	350K4518	TR 2SA933-T R
Q5R4 Q501 Q56E		
Q573		
Q743 Q744 Q745	350K5217	TR,2SA1018-TA Q
Q5G1 Q5G3 Q5M0	350K5718	TR 2SA933S-T R
Q5S1 Q711 Q712		
Q713 Q8A3 Q8A7		
Q863 Q864 Q951		
Q732	350K7500	TR 2SA1206-T
Q956	35011600	TR 2SA1831
Q451	35025211	TR 2SB546 K
Q571	35025212	TR 2SB546 L
Q5A2 ⚠Q5E1	35050918	TR 2SC1384 R
⚠Q651	35053012	TR 2SC1941 L
Q481	35056311	TR 2SC2688 K
Q482	35058905	TR,2SC1841 E
Q452	35063411	TR,2SD401A K
Q461 Q471 Q8A1	35065416	TR,2SD882 P
Q8C0		
Q723 Q724 Q725	35080200	TR 2SC2407/2407A
Q958	35084600	TR,2SC3675
Q953 Q955	35094200	TR 2SC4572
⚠Q581	35094300	TR 2SC3998
Q422 Q423 Q424	351A0690	TR DTC115ES-TP
Q425		
⚠Q5E4	351G0553	TR DTA143ES-T
Q56A Q56C Q59A	351G0560	TR DTA144WS-T
Q59E		
Q708 Q8G0 Q8G1	351G0600	TR DTA114ES-T
⚠Q2005 ⚠Q2006 Q5G0	351G0601	TR DTC114ES-T
Q5R0 Q707 Q709		
Q719 Q734 Q8A5		
Q8G2 Q8G4 Q802		
Q803 Q804 Q805		
⚠Q5E0 Q50A Q51A	351G0602	TR DTC144ES-T
Q52A Q53A Q54A		
Q55A Q58A Q59C		
Q59F Q717 Q718		
Q8G3		
Q801	351G0641	TR DTC114YS-T
⚠Q654	351G0653	TR DTC123ES-T
Q2101 Q5R1	351G0655	TR DTC143ES-TP
Q5G6 Q5M3 Q574	35122500	TR 2SK758
Q8A9	35122600	TR 2SK701
⚠Q5A4 ⚠Q5A5	35122800	TR 2SK1271
Q591 Q592 Q593	35125700	TR 2SK947

SYMBOL	PARTS NO	DESCRIPTION
Q594 Q595 Q596	35125700	TR 2SK947
⚠Q601	35125800	TR,2SK1342
⚠Q5E3	35126900	TR 2SK806
Q860	35560416	TR 2SD794A P
⚠CR601	35595015	TRIAC AC10FGM

*** DIODES ***

SYMBOL	PARTS NO	DESCRIPTION
⚠D605	360K1010	DIODE,SI.1S2472
D101 D102 D103	360K1027	DI 1SS132 AT52
D104 D105 D106		
D107 D108 D109		
D110 D111 D112		
D113 D114 D115		
D116 ⚠D2003 ⚠D2006		
⚠D2008 ⚠D2101 D2102		
D2103 D401 D5A0		
D5A1 D5A3 ⚠D5E1		
D5G0 D5G1 D5G2		
D5G4 D5G5 D5G6		
D5M0 D5M2 D5M3		
D5M4 D5R1 D501		
D502 D591 D592		
⚠D654 ⚠D655 D7G0		
D701 D702 D703		
D704 D705 D706		
D707 D708 D709		
D710 D711 D712		
D713 D714 D715		
D716 D717 D718		
D719 D720 D721		
D722 D723 D725		
D726 D727 D728		
D729 D730 D8A1		
D8A2 D8A3 D8A4		
D8A5 D8A6 D8G0		
D8G1 D8G2 D8G3		
D8G4 D8G5 D8G6		
D8G7 D8G8 D8G9		
D8H2 D8H3 D8H4		
D803 D804 D805		
D806 D860 D861		
D862 D863 D864		
D901 D951 D952		
D953 D954		
D482 D491 D755	360K1032	DIODE 1SS82-TA
D756 D757 D758		
D759 D760 D761		
D762 D763 D902		
ZD801	360K3087	DIODE RD3.0EB-T4
ZD860	360K3114	DIODE 8.2EB(1)
ZD452	360K3118	DIODE RD10EB(1)-T4
⚠ZD653	360K3123	DIODE RD20EB(3)
⚠ZD652	360K3124	DIODE RD8.2EB (3)-T4
ZD471 ZD5A1 ⚠ZD5E1	360K3134	DIODE RD15EB(2)-T4
ZD571		
ZD5R1	360K3145	DIODE RD27EB-T4
ZD5A0	360K3157	DIODE RD5.1EB(3)-T4
ZD503	360K3160	DIODE RD8.2EB(2)-T4
ZD5R2	360K3161	DIODE RD12EB(2)-T4
ZD8A3	360K3169	DIODE RD6.2EB(2)-T4

SYMBOL	PARTS NO	DESCRIPTION
ZD461 ZD561 ZD591	360K3170	DIODE RD6.2JSB(2)/JSAB(2)
ZD592		
ZD502	360K3188	DIODE RD3.9EB(2)-T4
ZD711 ZD712 ZD713	360K3300	DIODE RD2.0EB(1)-T4
ZD5A2	360K3326	DIODE RD18EB(3)-T4
ZD501	360K3403	DIODE RD5.1JSB(1)-T4
⚠ZD2001 ⚠ZD2002	360K3416	DIODE RD5.1JSB(2)-T4
ZD951	360K3605	DIODE RD2.2ESB(1)-T4
ZD401	360K3617	DIODE RD3.3ESB(1)-T4
ZD5G2	360K3624	DIODE RD3.9ESB(2)-T4
ZD8A4	360K3634	DIODE RD5.1ESB(1)-T4
⚠ZD5E0	360K3635	DIODE RD5.1ESB(2)-T4
ZD803	360K3637	DIODE RD5.6ESB-T4
⚠ZD2101	360K3647	DIODE RD6.8ESB(2)-T4
ZD5G0 ZD710 ZD8A1	360K3654	DIODE RD8.2ESB(1)-T4
⚠ZD5D1	360K3655	DIODE RD8.2ESB(2)/ESAB(2)
ZD5G3	360K3656	DIODE RD8.2ESB(3)-T4
ZD5G1	360K3658	DIODE RD9.1ESB(1)-T4
⚠ZD5E4	360K3675	DIODE RD13ESB(2)-T4
⚠ZD5E2	360K3680	DIODE RD15ESB(3)-T4
ZD8A2	360K3683	DIODE RD16ESB(2)-T4
⚠ZD651	360K3721	DIODE RD36ESB(3)-T4
⚠D602	361K7303	DIODE EU02 V1
⚠D5A2	361K7312	DIODE EP01C-V
⚠D604	361K7322	DIODE EL1Z-T
⚠D5E2 ⚠D5E4 ⚠D572	361K7562	DIODE EGP10G G23
D590 D8A9 D8C0		
D5M5	361K7637	DIODE EGP20G G23
MD801 MD802	361K8233	DIODE DAN209S-TP
⚠D603	36107174	DIODE RU1P
⚠D656	36107178	DIODE RU3
D573 D574 D8A7	36107293	DIODE RK14
⚠D651 ⚠D652	36107320	DIODE FMG-G26S
⚠D5D1 ⚠D5E3	36107541	DIODE EG01A
⚠D583 ⚠D584	36107560	DIODE RG2A2
D5G7	36107638	DIODE EGP30G
⚠D653	36108072	D,NETWORK D5LCA20
⚠D601	36108201	DIODE,NETWORK D5SBA60S
⚠D582	36108238	DIODE FMP-G3FS
ZD802	367K0017	DIODE RD4.7EB-T4
ZD861	367K0048	DIODE RD5.1FB(2)
D120	36801340	LED SLR-34MC3F
D121 D122	36801343	LED SLA-570MT3F(XJ,XK,XL)
D402 D481 D5G3	369K2136	DIODE RGP10G,AT
D5G8 D731 D732		
D8C3 D8C4		
ZD451	369K5512	DIODE,ZENER RD18JSB2
⚠TH601	38112058	THERMISTOR,POSITIVE
⚠PC601 ⚠PC602	38200233	IC TLP634(NHE-LF2)

*** TRANSFORMERS ***

SYMBOL	PARTS NO	DESCRIPTION
T571	45804008	TRANS,H.DRIVE
L5M1	46206005	TRANS,CHOKE 4MH
L5G1	46206006	TRANS,CHOKE 2MH
T5G0 T5M0	46302105	TRANS,FERRITE

SYMBOL	PARTS NO	DESCRIPTION
T8A1	46304111	TRANS,CONVERTER
⚠T601	46311405	TRANS,SWITCHING W345
⚠T5A1	47105678	F.B.T.(SR)
⚠T581	47710017	TRANS,H.OUTPUT

*** VARIABLE RESISTORS ***

VR8A1	410G1207	R,VARIABLE B1.0K
VR701 VR702 VR703	410G1210	R,VARIABLE B3.3K
VR861	410G1211	R,VARIABLE B4.7K
VR860	410G1213	R,VARIABLE B10K
VR801 VR802	410G1415	R,VARIABLE B22K-T
VR101 VR102	41011106	R,VARIABLE B10K-V
VR411	41085005	R,VARIABLE B1K
VR401 VR421 VR590 VR951	41085009	R,VARIABLE B10K
VR441 VR56A	41085012	R,VARIABLE B50K
VR431 VR56C VR56E VR901 VR952	41085014	R,VARIABLE B200K
VR461	41085056	R,VARIABLE B2K
VR5U1 VR5W1	41085059	R,VARIABLE B10K
VR5S2	41085066	R,VARIABLE B500K
VR720 VR721 VR722 VR723 VR724 VR725	415K5159	R,VARIABLE B20K
⚠VR5D1	41505005	R,VARIABLE B2K
⚠VR2001⚠VR5E1	41505007	R,VARIABLE B5K
⚠VR651	41505103	R,VARIABLE B500

*** RELAYS & SWITCHES ***

SW111 SW401	65161048	SWITCH,SLIDE
SW112	65161059	SWITCH,SLIDE 1-6L-3NS
SW701	65161062	SWITCH,SLIDE 2-6L-2NS
SW101 SW102 SW103 SW104 SW105 SW106 SW107 SW108 SW109 SW110	653F0031	SWITCH,PUSH BUTTON
	65360029	SWITCH,PUSH BUTTON
RL590 RL591	65660004	RELAY G6C-1114P-US
⚠RL601	65660019	RELAY G5P-1(24V)

*** COILS & FILTERS ***

MR802	390C0151	R,NETWORK 8*10K 5% 1/8W
MR801	390C9804	R,NETWORK
MR803 MR804 MR805 MR806 MR807	390C9805	R,NETWORK 4*1.0K 5% 1/6W
MC801 MC802 MC803 MC804	39013042	C,CERAMIC 25V 0.01UF
⚠L591 ⚠L592	60919121	COIL,H.LIN. N-59 (16T)
⚠L590	60919122	COIL,H.LIN. N-60 (10T)
L5S1	610E1717	COIL,FILTER 10UH
L710 L711 L712	610E1726	COIL,FILTER 56UH
⚠L602	610F5002	FERRITE BEADS (B-02-RT)
L720 L721 L722	610F6014	COIL,FILTER 5.6UH
L901 L902 L903	610F7619	COIL,FILTER 0.15UH
L8A5	61055001	COIL,FILTER 8500UH
	61062076	POWER LINE FILTER

SYMBOL	PARTS NO	DESCRIPTION
⚠FL601 FL602	61062102	COIL,LINE FILTER 8.2MH
⚠L5E1 L5G0 L5G2 ⚠L5M0 L8A1 L8A2	61064006	COIL,FILTER 50UH
⚠L594	61070135	FILTER CHOKE 4MH
⚠L601	61072349	COIL,FILTER
L704	61099011	COIL,CHOKE 33UH
⚠L653	61099013	COIL,CHOKE 10UH
⚠L652	61099014	COIL,CHOKE 33UH
⚠L593	61099019	COIL,CHOKE 10MH
⚠L651	61099036	FILTER CHOKE
L8A3	61099047	FILTER CHOKE
DEG	61321205	COIL,DEGAUSSING
LC901	616K6028	NOISE FILTER 1H223X-TA
LC701 LC702 LC703 LC704	616K6801	NOISE FILTER 2R2-101-T
LC711 LC712 LC713 LC714 LC715 LC902	616K6946	NOISE FILTER TH28123MA
LC708 LC709 LC710	616K6964	NOISE FILTER TX07250NBT
LC705 LC706 LC707	616K6965	NOISE FILTER TX09500NBT

*** PWB ASSYS ***

	84N68A01	SW.REG PWB ASSY
	84N68C01	VIDEO PWB ASSY
	84N68D01	DEF PWB ASSY
	84N68J01	CRT PWB ASSY
	84N68M03	CPU PWB ASSY
	84N68S02	SDP PWB ASSY
	84N68T02	TR PWB ASSY

*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***

HS2	31709105	SHEET,HEAT SINK
HS1	31709204	SHEET,HEAT SINK
HS582	31709503	SHEET,INSULATOR
HS581	31709507	SHEET,INSULATOR HEAT SINK
HS3	31709612	SHEET INSULATOR M-45
HS5A4	31709614	SHEET,INSULATOR M-45
SG901 SG902 SG903 SG904	329J0047	ARRESTER (300V),AT52
X801	64098031	X'TAL 12000KHZ
⚠F601 ⚠F651	66671027	FUSE 250V 4A
SG951	667K7001	SPARK GAP 1.2KV
SG905	66706002	SPARK GAP 1.5KV
	70032054	SG/CRT SOCKET(DBF)
	70051321	RECEPTACLE 1P
CN-D2	70056398	MINI D-SUB COCKET 15PV
CN-D1	70056399	D-SUB SOCKET 15PV
	70800066	LINE CORD E-3 #8011
	71205037	HOLDER,FUSE
	73893105	CABLE,SIGNAL D15P-MD15P
	74004891	CAP

*** APPEARANCE PARTS ***

	25282981	SCREW REVET
	25283511	JOINT
	25314021	CABINET BACK(A) ASSY

SYMBOL	PARTS NO	DESCRIPTION
	25314041	CABINET BACK(B) ASSY
	25314062	CABINET BOTTOM
	25314151	CABINET FRONT ASSY
	25419341	HOOK (B)
	25419402	REVOLVING SPINDLE
	25419491	ESCUTCHEON
	25419501	REVOLVING STAND ASSY
	25421111	LID CONTROL ASSY
	25534631	COIL SPRING
	25607291	SLIDE SHEET
	25612281	FOOT RUBBER (D21)
	25757643	LABEL(REV.)
	25775231	NAME PLATE,INSTRUCTION
	25775701	LABEL (CONTROL)
	25776261	LABEL (ESCUTCHEON)
*** KNOBS & PUSH BUTTONS ***		
	25454691	KNOB,SLIDE
	25454741	PUSH BUTTON (SW)
	25454752	KNOB,CONTROL
*** PRINTED & PACKING MATERIALS ***		
	24813191	BAG,POLYETHYLENE(150*370)
	24814531	BAG,POLYEHYLENE (180*350)
	25815061	BAG,POLYETHYLENE (270X370
	25822831	SHEET PROTECTION
	25823512	CARTON BOX(B)
	25823522	FILLER T,CARTON
	25823532	FILLER B,CARTON
	25826333	CARTON BOX(T)(JC-2141UMB)
	25826571	CORNER ANGLE
	78034407	**MONITOR SALES OFFICE LIST**
	78126012	USER'S MANUAL (5FG/6FG)B
	78652212	TEMPLATE B
*** RESISTORS ***		
R406	401C6609	R,CARBON 2.2H 5% 1/4W
R583 R584	401C6651	R,CARBON 120H 5% 1/4W
⚠R668	401C6657	R,CARBON 220H 5% 1/4W
⚠R667 R834	401C6665	R,CARBON 470H 5% 1/4W
R124	401C6667	R,CARBON 560H 5% 1/4W
R5R6	401C6669	R,CARBON 680H 5% 1/4W
R578	401C6677	R,CARBON 1.5K 5% 1/4W
R911	401C6689	R,CARBON 4.7K 5% 1/4W
⚠R5E8	401C6691	R,CARBON 5.6K 5% 1/4W
⚠R5AA ⚠R5AC	401C6745	R,CARBON 1.0M 5% 1/4W
R8C4	401C6761	R,CARBON 4.7M 5% 1/4W
⚠R5GA	401G6127	R,CARBON 12H 5% 1/4W
⚠R491	401G6173	R,CARBON 1.0K 5% 1/4W
⚠R5N4	401G6185	R,CARBON 3.3K 5% 1/4W
⚠R5D4	401G6191	R,CARBON 5.6K 5% 1/4W
⚠R5A9	401G8137	R,CARBON 33H 5% 1/2W
R904 R905 R906	401H5645	R,CARBON 68H 5% 1/2W
R790 R791 R792	401H5657	R,CARBON 220H 5% 1/2W

SYMBOL	PARTS NO	DESCRIPTION
R725 R726 R727	401H5661	R,CARBON 330H 5% 1/2W
⚠R619	401H5667	R,CARBON 560H 5% 1/2W
R985	401H5677	R,CARBON 1.5K 5% 1/2W
R8A4	401H5681	R,CARBON 2.2K 5% 1/2W
R8A1	401H5683	R,CARBON 2.7K 5% 1/2W
⚠R655	401H5705	R,CARBON 22K 5% 1/2W
R974 R975	401H5731	R,CARBON 270K 5% 1/2W
⚠R601	401H5737	R,CARBON 470K 5% 1/2W
⚠R5N5	401H5741	R,CARBON 680K 5% 1/2W
⚠R603	401H5745	R,CARBON 1.0M 5% 1/2W
⚠R5E7 R524 R7F4	401J9820	RD16Z,0H,AT52
R7F5 R8F9 R865		
R50F R51C R54F	401K5601	R,CARBON 1H 5% 1/6W
R56X		
R5K6 R909	401K5633	R,CARBON 22H 5% 1/6W
R7C0 R7C1 R7C2	401K5639	R,CARBON 39H 5% 1/6W
R5N2	401K5641	R,CARBON 47H 5% 1/6W
R8D0	401K5643	R,CARBON 56H 5% 1/6W
R970	401K5647	R,CARBON 82H 5% 1/6W
⚠R2011 R408 R57E	401K5649	R,CARBON 100H 5% 1/6W
R59A R59C R59E		
R59F R59G R59W		
⚠R662 R7A0 R7A1		
R7A2 R7G1 R750		
R751 R752 R910		
R966		
R719 R720 R721	401K5653	R,CARBON 150H 5% 1/6W
R722 R723 R724		
R760 R761 R762		
R784 R785 R786		
R110 R8E7	401K5655	R,CARBON 180H 5% 1/6W
R56S ⚠R615 R8F4	401K5657	R,CARBON 220H 5% 1/6W
R2102 R513 R802	401K5659	R,CARBON 270H 5% 1/6W
R56M R58C R7G0	401K5661	R,CARBON 330H 5% 1/6W
R7A3 R7A5 R7A7	401K5663	R,CARBON 390H 5% 1/6W
R781 R782 R783	401K5665	R,CARBON 470H 5% 1/6W
R8C6		
R596 R598 R8L3	401K5667	R,CARBON 560H 5% 1/6W
R121 ⚠R672 R756	401K5669	R,CARBON 680H 5% 1/6W
R757 R758 R8E6		
R8H0		
R775 R777 R779	401K5671	R,CARBON 820H 5% 1/6W
R111 R409 R454	401K5673	R,CARBON 1.0K 5% 1/6W
R455 R5A8 ⚠R5EA		
⚠R5E4 ⚠R5E5 R5W4		
R5W5 R516 R53L		
R535 ⚠R605 ⚠R674		
R738 R787 R788		
R789 R8K8 R8K9		
R810 R811 R832		
R857 R858 R859		
R86A R86C R871		
R873 R877 R878		
R879 R880 R882		
R956 R957		
R511 ⚠R659 R8H6	401K5675	R,CARBON 1.2K 5% 1/6W
R8H8		
R474 R5A7 ⚠R5D3	401K5677	R,CARBON 1.5K 5% 1/6W
R528 ⚠R657 ⚠R658		

SYMBOL			PARTS NO	DESCRIPTION
R8G9	R8H2		401K5677	R,CARBON 1.5K 5% 1/6W
R5R5	R793	R971	401K5679	R,CARBON 1.8K 5% 1/6W
R407	R466	R57K	401K5681	R,CARBON 2.2K 5% 1/6W
R7G2	R7G3	R731		
R732	R735	R736		
R737	R739	R8C1		
R8C2	R816	R983		
R5A0	R5A4	R5A5	401K5683	R,CARBON 2.7K 5% 1/6W
⚠R5E0	R5U7	R8H7		
R801	R870	R876		
⚠R201G	R411	R5X6	401K5685	R,CARBON 3.3K 5% 1/6W
R52F	R59L	R59S		
R59T	R590	R595		
R597	R707	R709		
R711	R713	R715		
R717	R776	R778		
R780	R8G4	R8G5		
R8G6	R8G7	R8G8		
R8H1	R8H5	R8H9		
R8L0	R8L1	R863		
R872	R965			
R463	R5K5	R5N0	401K5687	R,CARBON 3.9K 5% 1/6W
R50K	R51K	R52K		
R53K	R54K	R55K		
R58K	R7A4	R7A6		
R7A8	R7G4	R8E0		
⚠R201M	R401	R462	401K5689	R,CARBON 4.7K 5% 1/6W
R5H1	R5R4	R533		
⚠R663	R763	R8K4		
R8K5	R866			
⚠R2006	R465	⚠R5D2	401K5691	R,CARBON 5.6K 5% 1/6W
⚠R5E1	⚠R5E9	R5Y4		
R520	R7C4	R7C6		
R7C8	R8E1	R8G0		
R8G2	R8K0	R8K1		
R8K2				
R120	⚠R201H	R5G1	401K5693	R,CARBON 6.8K 5% 1/6W
R5G5	R5K7	R5M0		
R5N1	R5T6	R514		
R745	R803	R818		
R5H4	R7E2	R7E3	401K5695	R,CARBON 8.2K 5% 1/6W
R7E4	R8A9	R862		
R864	R869			
⚠R2007	⚠R201K	⚠R2010	401K5697	R,CARBON 10K 5% 1/6W
⚠R2020	R464	R475		
R5G2	R5M8	R5S3		
R5S4	R5T1	R5T2		
R5T4	R5U0	R5U2		
R5U3	R5X1	R5X4		
R5Y3	R50M	R504		
R505	R515	R526		
R527	R529	R53S		
R544	R569	⚠R652		
R7E5	R7E6	R7E7		
R7F3	R708	R710		
R712	R714	R716		
R718	R742	R744		
R764	R765	R766		
R767	R768	R769		
R772	R773	R774		
R8A2	R8A3	R8C0		
R8C7	R8F8	R805		

SYMBOL			PARTS NO	DESCRIPTION
R807	R808	R809	401K5697	R,CARBON 10K 5% 1/6W
R850	R851	R852		
R867	R868	R874		
R884	R907	R913		
R951	R952	R979		
R982	R984	R987		
⚠R2013	R402	R420	401K5699	R,CARBON 12K 5% 1/6W
⚠R5E2	R5G4	R5R0		
R5R7	R512	R523		
R59N	R741	R743		
R886	R964			
R2104	R421	R5H0	401K5701	R,CARBON 15K 5% 1/6W
⚠R614	⚠R670	R8A5		
R8A6	R8K3	R817		
R5X7			401K5703	R,CARBON 18K 5% 1/6W
⚠R201L	R404	R5H5	401K5705	R,CARBON 22K 5% 1/6W
R5M2	R5T7	R5U9		
R5W9	R522	⚠R613		
⚠R660	R7F0	R7F1		
R7F2	R730	R734		
R8A8	R8C3	R8K6		
R976	R978			
R424	R451	R5T3	401K5707	R,CARBON 27K 5% 1/6W
R5U6	R5Y6	R50T		
R52T	R53T	R54T		
R55T	R58T	R981		
R989				
⚠R2012	R2101	R423	401K5709	R,CARBON 33K 5% 1/6W
R5C4	⚠R5D5	R5H8		
R5M6	R503	R509		
R531	R532	R534		
R568	R7D9	R7E0		
R7E1	R853	R854		
R855	R856	R885		
R955	R962			
⚠R200A	⚠R200C	⚠R201E	401K5711	R,CARBON 39K 5% 1/6W
R422	R443	R482		
R837				
R5A3	R5H2	R5H3	401K5713	R,CARBON 47K 5% 1/6W
R5S8	R5T0	⚠R669		
R7C3	R7C5	R7C7		
R806	R914	R954		
R980				
⚠R200F	R436	R437	401K5715	R,CARBON 56K 5% 1/6W
R483	R5M7	R56G		
R56H	R8F2	R958		
R960				
R450	R5S7	R5S9	401K5717	R,CARBON 68K 5% 1/6W
R5Y5	R502	⚠R671		
R5H7	R5T8	R56T	401K5719	R,CARBON 82K 5% 1/6W
R59M	R7D6	R7D7		
R7D8	R835			
⚠R2008	⚠R201F	R431	401K5721	R,CARBON 100K 5% 1/6W
R433	R434	R435		
R452	R453	R5G7		
R5U1	R5U8	R5W2		
R5W3	R5X5	R56C		
R58H	⚠R620	R8H3		
R961	R986			
R484	R5K3	R5M3	401K5723	R,CARBON 120K 5% 1/6W
R56A	R56F	R953		
⚠R2009	R5S6	R56E	401K5725	R,CARBON 150K 5% 1/6W

SYMBOL	PARTS NO	DESCRIPTION
R7D3 R7D4 R7D5	401K5725	R,CARBON 150K 5% 1/6W
R50H R50L R8A7	401K5727	R,CARBON 180K 5% 1/6W
R5G8 R5W0 R7D0	401K5729	R,CARBON 220K 5% 1/6W
R7D1 R7D2 R8G1		
R8G3 R8K7 R988		
R438 R56W R836	401K5731	R,CARBON 270K 5% 1/6W
R5N7 R7F6 R7F7	401K5733	R,CARBON 330K 5% 1/6W
R7F8		
R51H	401K5735	R,CARBON 390K 5% 1/6W
R5G3 R52H R912	401K5737	R,CARBON 470K 5% 1/6W
R959		
R53H R8C5	401K5743	R,CARBON 820K 5% 1/6W
R5G9 R5M5 R54H	401K5745	R,CARBON 1.0M 5% 1/6W
R8C8		
R55H	401K5747	R,CARBON 1.2M 5% 1/6W
R492 R908	401K5749	R,CARBON 1.5M 5% 1/6W
⚠R201D ⚠R210C	401K5753	R,CARBON 2.2M 5% 1/6W
R501	401K5757	R,CARBON 3.3M 5% 1/6W
R5G6	40175101	R,CARBON 1H 5% 1/4W
⚠R5C1 ⚠R5C2 ⚠R612	40175125	R,CARBON 10H 5% 1/4W
⚠R5M1	40175127	R,CARBON 12H 5% 1/4W
⚠R611	40175145	R,CARBON 68H 5% 1/4W
R581 R582	40298004	R,WIRE 1.0H 1% 5W
⚠R602	40298005	R,WIRE 15H 5% 7W
R8F6	403F1121	R,METAL OXIED 6.8H 5% 1W
R8F7	403F1131	R,METAL OXIED 18H 5% 1W
⚠R57T	403F1137	R,METAL 33H 5% 1W
R405	403F1165	R,METAL 470H 5% 1W
R5A6 ⚠R5E3	403F1173	R,METAL OXIED 1.0K 5% 1W
R5A1	403F1177	R,METAL OXIDE 1.5K 5% 1W
R410	403F2101	R,METAL 1.0H 5% 2W
R8F0	403F2103	R,METAL OXIDE 1.2H 5% 2W
R8F3	403F2109	R,METAL 2.2H 5% 2W
R8F5	403F2113	R,METAL OXIDE 3.3H 5% 2W
R883	403F2149	R,METAL OXIDE 100H 5% 2W
R7G5 R8E4 R8E5	403F2151	R,METAL OXIDE 120H 5% 2W
R476 R477	403F2169	R,METAL OXIDE 680H 5% 2W
R519	403F2171	R,METAL 820H 5% 2W
R8F1	403F3137	R,METAL OXIDE 33H 5% 3W
⚠R599	403F3141	R,METAL OXIDE 47H 5% 3W
R456 R457	403F3143	R,METAL OXIDE 56H 5% 3W
R861	403F3159	R,METAL OXIDE 270H 5% 3W
R521	403F3163	R,METAL OXIDE 390H 5% 3W
⚠R5D6	403F3173	R,METAL OXIDE 1.0K 5% 3W
R57V	403F3177	R,METAL OXIDE 1.5K 5% 3W
R967 R968	403F3209	R,METAL OXIDE 33K 5% 3W
⚠R5D7	40318994	R,METAL 2.2K 5% 5W
⚠R656	40372135	R,METAL 27H 5% 2W
⚠R604	40372151	R,METAL 120H 5% 2W
⚠R666	40372175	R,METAL 1.2K 5% 2W
⚠R665	40372197	R,METAL 10K 5% 2W
⚠R607	40372211	R,METAL 39K 5% 2W
⚠R664	40372213	R,METAL 47K 5% 2W
⚠R606	40372219	R,METAL 82K 5% 2W
⚠R608	40372329	R,METAL 0.22H 5% 2W
⚠R651 ⚠R654	40373135	R,METAL 27H 5% 3W
⚠R610	40373141	R,METAL 47H 5% 3W

SYMBOL	PARTS NO	DESCRIPTION
⚠R616 ⚠R617	40373219	R,METAL 82K 5% 3W
R8E8	40399049	R,METAL 82H 5% 3W
R701 R702 R703	404C1646	R,METAL 75H 1% 1/6W
R704 R705 R706		
R795 R796 R797	404C1653	R,METAL 150H 1% 1/6W
R50C	404C1675	R,METAL 1.2K 1% 1/6W
⚠R2018	404C1677	R,METAL 1.5K 1% 1/6W
R58F	404C1681	R,METAL 2.2K 1% 1/6W
R122 R537 ⚠R661	404C1683	R,METAL 2.7K 1% 1/6W
R5A2	404C1685	R,METAL 3.3K 1% 1/6W
R51F R58A ⚠R653	404C1689	R.METAL 4.7K 1% 1/6W
R123	404C1691	R,METAL 5.6K 1% 1/6W
R403 R8H4	404C1694	R,METAL 7.5K 1% 1/6W
R52C	404C1695	R,METAL 8.2K 1% 1/6W
⚠R2019 R5X0 R50A	404C1697	R,METAL 10K 1% 1/6W
R56R R729 R8E2		
R8E3 R840 R843		
R846 R849		
R472 R53C R58G	404C1699	R,METAL 12K 1% 1/6W
R5S5 R50G R536	404C1703	R,METAL 18K 1% 1/6W
R576 R579		
R5F4 R51G R53F	404C1705	R,METAL 22K 1% 1/6W
R538 R573 R577		
R425 R51A R54C	404C1707	R,METAL 27K 1% 1/6W
R52G R55C	404C1709	R,METAL 33K 1% 1/6W
R5U4 R5U5	404C1710	R,METAL 36K 1% 1/6W
R447 R52A R53G	404C1711	R,METAL 39K 1% 1/6W
R55F		
R471 R5S0	404C1713	R,METAL 47K 1% 1/6W
R445 R5X2 R5X3	404C1715	R,METAL 56K 1% 1/6W
R56L R572		
R426 R429 R5F3	404C1717	R,METAL 68K 1% 1/6W
R510 R57A		
R473	404C1719	R,METAL 82K 1% 1/6W
⚠R2001 R5F8 R5S1	404C1721	R,METAL 100K 1% 1/6W
R5S2 R5X9 R5Y1		
R5Y2 R50E R507		
R51E R52E R53A		
R53E R54E R54G		
R55E R56K R58E		
R838 R841 R844		
R847		
R55G R574	404C1723	R,METAL 120K 1% 1/6W
R839 R842 R845	404C1724	R,METAL 130K 1% 1/6W
R848		
R5N9 R54A	404C1725	R,METAL 150K 1% 1/6W
R428 R440 R442	404C1727	R,METAL 180K 1% 1/6W
R446 R5X8 R508		
R430 R444 R506	404C1729	R,METAL 220K 1% 1/6W
R55A R571 R575		
R427	404C1737	R,METAL 470K 1% 1/6W
R441	404C1743	R,METAL 820K 1% 1/6W
R439	404C1745	R,METAL 1.0M 1% 1/6W
⚠R5C3 ⚠R5D1 ⚠R5F9	404K5109	R,METAL 2.2H 5% 1/4W
⚠R57H ⚠R570		
⚠R461 ⚠R591	404K5117	R,METAL 4.7H 5% 1/4W
⚠R481 ⚠R5F2 ⚠R860	404K5125	R,METAL 10H 5% 1/4W
⚠R5F0 ⚠R57F ⚠R57L	404K5141	R,METAL 47H 5% 1/4W
⚠R5R8	40405125	R,METAL 10H 5% 1/4W

SYMBOL	PARTS NO	DESCRIPTION
⚠R5N3	408A8107	R,FUSE 1.8H 5% 1/2W
⚠R592 ⚠R593 ⚠R594	408A8157	R,FUSE 220H 5% 1/2W
⚠R57G	409A6149	R,FUSE 100H 5% 1/4W

*** CAPACITORS ***

C903	420C9551	C,CERAMIC 500V 100PF
C481 C5G8 ⚠C591	420C9563	C,CERAMIC 500V 1000PF
⚠C592 ⚠C593 C7A6		
C7A7 C7A8 C904		
C574	420C9567	C,CERAMIC 500V 2200PF
C7E9 C796 C797	420C9569	C,CERAMIC 50V 3300PF
C798		
C901	4203J575	C,CERAMIC 500V 0.01UF
C905	42040108	C,CERAMIC 2KV 0.01UF
⚠C603 ⚠C604	42053069	C,CERAMIC 400V 3300PF
⚠C609 ⚠C617	42053071	C,CERAMIC 400V 4700PF
⚠C658	42099086	C,CERAMIC 2KV 1000PF
⚠C611 ⚠C618	42099088	C,CERAMIC 2KV 220PF
⚠C651 ⚠C655	42099095	C,CERAMIC 2KV 330PF
⚠C607 ⚠C614	42099096	C,CERAMIC 2KV 470PF
C451 C518 C521	421A0425	C,CERAMIC 50V 0.01UF
C530 C57A C810		
C811		
C5R1	421C0205	C,CERAMIC 50V 220PF
C401 C762 C763	421C0213	C,CERAMIC 50V 1000PF
C764 C777 C778		
C779 C8A9 C867		
C737 C738 C739	421C0219	C,CERAMIC 50V 3300PF
C5G1 C7D4 C7D5	421C0225	C,CERAMIC 50V 0.01UF
C7D6 C707 C708		
C709 C710 C711		
C712 C718 C719		
C720 C759 C760		
C761 C768 C769		
C770 C784 C785		
C786 C790 C791		
C792		
C86A C86C	421C3461	C,CERAMIC 16V 0.01UF
C5S1 C5S8 C5S9	421D6009	C,CERAMIC 25V 0.1UF
C5T0 C5T1 C5T2		
C5X0 C504 C59E		
C59F C59G C59H		
C59K C59M C7E5		
C7E6 C7E7 C7E8		
C7F0 C7F1 C7F2		
C714 C716 C753		
C754 C755 C8A8		
C8H7 C8K3 C8K4		
C8K7 C8K8 C8K9		
C802 C826 C827		
C829 C830 C834		
C835 C864 C865		
C868 C869 C870		
C958 C965		
C200P C2021 C406	421D6013	C,CERAMIC 50V 0.1UF
C47P C471 C5A5		
C5EP C50A C50R		
C50S C507 C51C		
C51P C56A C56C		
C57P C8C7 C8C8		

SYMBOL	PARTS NO	DESCRIPTION
C5X1	421J9036	C,CERAMIC 25V 0.1UF
C8A1	423A1028	C,CERAMIC 50V 20PF
C509 C717	423A1045	C,CERAMIC 50V 100PF
C5G3 C8G9 C8K0	423A1057	C,CERAMIC 50V 330PF
C8K1 C8K2		
⚠C616	423A1100	C,CERAMIC 50V 390PF
C5G5 C5M0 C8K5	423A1101	C,CERAMIC 50V 470PF
C962		
C959	423A1103	C,CERAMIC 50V 560PF
C7D1 C7D2 C7D3	423A2015	C,CERAMIC 50V 10PF
C804 C805		
C820	423A2025	C,CERAMIC 50V 15PF
C5G0 C506 C787	423A2033	C,CERAMIC 50V 33PF
C788 C789		
⚠C5E2	423A2037	C,CERAMIC 50V 47PF
C781 C782 C783	423A2043	C,CERAMIC 50V 82PF
C529 C549 C966	423A2045	C,CERAMIC 50V 100PF
C5M5 C502 C510	423A2103	C,CERAMIC 50V 180PF
C511	423A2105	C,CERAMIC 50V 270PF
C515	427A7005	C,FILM 100V 0.0022UF
C8A6	427F4004	C,FILM 50V 1800PF
C8A7 C8H0	427F4009	C,FILM 50V 4700PF
⚠C5EA ⚠C5E6 C500	427F4013	C,FILM 50V 0.01UF
C8A5 C951 C957		
C516	427F4014	C,FILM 50V 0.012UF
C5G6	427F4021	C,FILM 50V 0.047UF
C5M2	427F4025	C,FILM 50V 0.1UF
⚠C5D2	427F4059	C,FILM 50V 4700PF
C412	427F4067	C,FILM 50V 0.022UF
C5G2	427F4601	C,FILM 50V 1000PF
C513	427F4603	C,FILM 50V 1500PF
C8D0	427F4605	C,FILM 50V 2200PF
C520	427F4610	C,FILM 50V 5600PF
C59N	427F4613	C,FILM 50V 0.01UF
C866	427F4617	C,FILM 50V 0.022UF
C5H7 C5H8 C5M4	427F4621	C,FILM 50V 0.047UF
C5M8		
⚠C661	427F4624	C,FILM 50V 0.082UF
C512 C578	427F4651	C,FILM 50V 1000PF
C955 C956 C963	427F4675	C,FILM 50V 0.1UF
C5A2 C5A3	427J9112	C,FILM 50V 1000PF
⚠C5D1	42703455	C,FILM 630V 2200PF
⚠C577	42703575	C,FILM 200V 0.1UF
⚠C664	42799057	C,FILM 100V 3300PF
C441 C442 ⚠C606	428B3013	C,METAL FILM 50V 0.1UF
⚠C662 C8G0 C8G2		
C402 ⚠C5D3	428B3021	C,METAL FILM 50V 0.47UF
C50C C8A2 C8D1	428B3025	C,METAL FILM 50V 1.0UF
⚠C613	428B3101	C,METAL FILM 50V 0.010UF
⚠C5E8 C5GE	428CJ022	C,METAL FILM 250V 0.1UF
⚠C666 ⚠C667	428D0053	C,METAL 100V 0.1UF
C7A0 C7A1 C7A2	428D0097	C,FILM 250V 0.22UF
C907		
C409	428D4317	C,METAL FILM 100V 0.22UF
⚠C5A8 C964	428JJ115	C,METAL 1000V 0.047UF
C960	42808501	C,METAL FILM 1.6KV 1000PF

SYMBOL	PARTS NO	DESCRIPTION
⚠C654	42809001	C,METAL FILM 100V 0.01UF
⚠C581	42817101	C,METAL 1600V 1500PF
⚠C5A6	42817103	C,METAL FILM 2.0KV 1700PF
⚠C582	42817201	C,METAL 1600V 6200PF
⚠C59A ⚠C599	42839602	C,METAL 400V 0.12UF
⚠C598	42839604	C,METAL 400V 0.18UF
⚠C596	42839610	C,METAL 400V 0.39UF 5%
⚠C595	42839613	C,METAL 400V 0.56UF
⚠C597	42839631	C,METAL FILM 400V 0.6UF
⚠C59C	42839707	C,METAL 400V 0.27UF 5%
⚠C610	42840225	C,METAL 630V 0.022UF
⚠C601	42898002	C,FILM AC250V 0.47UF
⚠C602 ⚠C619	42899098	C,FILM 250V 0.1UF
C7C6	430BJ518	C,ELEC 160V 33UF
C771 C772 C773	430B3104	C,ELEC 50V 3.3UF
C801	430B6017	C,ELEC 10V 220UF
⚠C2004 ⚠C2006 C733	430B6029	C,ELEC 16V 100UF
C734 C735 C969		
C5S6 C5S7 C508	430B6030	C,ELEC 16V 220UF
C724 C725 C726	430B6032	C,ELEC 16V 470UF
C736		
C5G9	430B6039	C,ELEC 25V 22UF
⚠C2002 C472 C5A1	430B6041	C,ELEC 25V 47UF
C5S4 C5S5 C5X2		
C57C C722 C741		
C780 C8H8		
C461	430B6054	C,ELEC 35V 100UF
C8L0	430B6060	C,ELEC 50V 0.47UF
C5M7 C517 C8H9	430B6061	C,ELEC 50V 1.0UF
C5S2	430B6063	C,ELEC 50V 3.3UF
C5H0 C5H1 C5X3	430B6064	C,ELEC 50V 4.7UF
C501 C8G8 C8H2		
C8H6		
C462 ⚠C5E0 C5H2	430B6065	C,ELEC 50V 10UF
C7E0 C7E1 C7E2		
C727 C728 C729		
C730 C731 C732		
C756 C757 C758		
C8G4 C8H5 C8K6		
C871		
⚠C2008 C5C0 C5GC	430B6066	C,ELEC 50V 22UF
C572		
⚠C5E9	430B6068	C,ELEC 50V 47UF
C571	430B6069	C,ELEC 50V 100UF
C590	430B6096	C,ELEC 100V 3.3UF
C8H3	430B6221	C,ELEC 50V 0.1UF
⚠C5F1	430B6516	C,ELEC 160V 10UF
C482	430B6536	C,ELEC 200V 10UF
C833	430B8135	C,ELEC 10V 220UF
C713 C715	430B8144	C,ELEC 16V 47UF
C803	430B8152	C,ELEC 25V 10UF
C5GA	430B8180	C,ELEC 50V 22UF
C863	430B9016	C,ELEC 10V 100UF
C503 C8C9 C831	430B9017	C,ELEC 10V 220UF
C861 C967 C968	430B9025	C,ELEC 16V 10UF
C765 C766 C767	430B9026	C,ELEC 16V 22UF

SYMBOL	PARTS NO	DESCRIPTION
C952 C953 C961	430B9028	C,ELEC 16V 47UF
C8C3	430B9031	C,ELEC 16V 330UF
C750 C751 C752	430B9032	C,ELEC 16V 470UF
⚠C5E7	430B9039	C,ELEC 25V 22UF
C5A4 C862	430B9041	C,ELEC 25V 47UF
⚠C665	430B9053	C,ELEC 35V 47UF
C411	430B9054	C,ELEC 35V 100UF
⚠C660	430B9057	C,ELEC 35V 470UF
C408	430B9061	C,ELEC 50V 1.0UF
⚠C5E3 ⚠C612 ⚠C615	430B9065	C,ELEC 50V 10UF
C2101 ⚠C5E4 C5G4	430B9066	C,ELEC 50V 22UF
C5M1		
C407	430B9070	C,ELEC 50V 220UF
C405	430B9071	C,ELEC 50V 330UF
C7A3 C7A4 C7A5	430B9512	C,ELEC 160V 1.0UF
C793 C794 C795	430B9513	C,ELEC 160V 2.2UF
C5G7 ⚠C59L C7D7	430B9552	C,ELEC 250V 1 UF
C832	430C0253	C,ELEC 25V 22UF
C8C1 C8C2	430C2105	C,ELEC 25V 470UF
C774 C775 C776	430C8423	C,ELEC 16V 470UF
C491	430C9154	C,ELEC 350V 3.3UF
C8C5	430J8109	C,ELEC 16V 47UF
⚠C659 ⚠C663	4302J059	C,ELEC 35V 2200UF
⚠C652	4302J105	C,ELEC 100V 470UF
⚠C653	4302J559	C,ELEC 250V 47UF
C410	4303D185	C,ELEC 50V 1500UF
C5A9 C5M6 C5M9	4303J222	C,ELEC 250V 2.2UF
C5H6	4303J224	C,ELEC 250V 4.7UF
C8A3 C8A4	43032175	C,ELEC 50V 220UF
⚠C656 ⚠C657 ⚠C669	4304A013	C,ELEC 160V 100UF
C5H9	4309H105	C,ELEC 200V 4.7UF
⚠C5E5	4309H106	C,ELEC 250V 22UF
⚠C605	43109493	C,ELEC 400V 470UF
C583	43198002	C,ELEC 200V 47UF
C8C4	432K6011	C,ELEC 10V 220UF
C8F0	432K6208	C,ELEC 63V 33UF
C5S3	433A3033	C,ELEC 25V 10UF
C8H4	433A3058	C,ELEC 50V 4.7UF
⚠C5MC	433A4025	C,ELEC 16V 47UF
C8G1 C8G3 C8H1	433A4056	C,ELEC 50V 22UF
C7C0 C7C1 C7C2	433A6045	C,ELEC 16V 22UF
C7C3 C7C4 C7C5		
C701 C702 C703		
C704 C705 C706		
⚠C5EC	433A7013	C,ELEC 16V 47UF
C514	435A8307	C,TANTALUM 35V 1.0UF

REPLACEMENT PARTS LIST

The components specified for Model JC-2141UMB(EE).

Notes: The components identified by ⚠ mark are critical for safety. Replace only with parts Number specified.

SYMBOL	PARTS NO	DESCRIPTION

*** CRT & TUNER ***

SYMBOL	PARTS NO	DESCRIPTION
⚠CRT	33021502	CRT AF21F9SLB22-E-TC42

*** ICS ***

SYMBOL	PARTS NO	DESCRIPTION
⚠IC5E1	370A1009	IC UPC1093J-T (REG)
IC811	370E6005	IC PST518A
IC503 IC8G0 IC8G2	37011018	IC UPC311C (COMP)
IC402 IC5G1	37011024	IC UPC3403C (OP-AMP)
⚠IC2001 ⚠IC2002	37011132	IC UPC4082C (OP-AMP)
IC471 IC5S2 IC506	37011206	IC XRA10358 (OP-AMP)
IC509 IC809 IC810		
IC863 IC951		
IC5S3 IC5S4 IC504	37011210	IC XRA10324 (Q OP-AMP)
IC806 IC807 IC808		
IC862 IC864		
⚠IC5E2 IC5G0 IC8A2	37011262	IC XRA10393 (COMP)
IC8G1		
IC431 IC505	37051036	MOS UPD4066BC
IC803	37051042	MOS UPD4028BC (BCD DECI)
IC8G5	37051096	IC SN74LS367AN (BUFF)
IC502 IC8G4	37051179	IC SN74LS123N (MONO MLT)
IC805	37053036	MOS SN74HC32N (OR)
IC5A1	37053390	MOS HD74HC123AP
IC804	37055401	MOS XRM93C56B-E
⚠IC501	37056295	IC LA7851
IC702 IC703 IC704	37056433	IC M51399P
IC5S1 IC952	37056618	IC BA6110
⚠IC601	37056810	IC M67297 (SW.REG CONT)
IC860 IC861	37056812	IC M62362P
IC802	37056813	IC M62359P
IC701	37056814	IC M52035P
IC8G3	37056867	IC M52036SP
IC5S5	37056877	IC NJM4200D (MULTIPLIER)
IC571 IC8A1	37056885	IC NJM3404AD
IC401	37056887	IC TDA1675A
IC705 IC706 IC707	37056905	IC VPA12H
IC801	37056915	IC UPD78C12AGQ-A66-36
IC510 IC511	37101543	IC XRA10339

*** TRANSISTORS ***

SYMBOL	PARTS NO	DESCRIPTION
⚠Q5M4	350A1500	TR 2SA1767-TA
⚠Q2002 Q421 Q462	350E3218	TR 2SC1740S-T R
Q5G2 Q5G4 Q5M1		
Q5R3 Q572 ⚠Q652		
⚠Q653 Q714 Q715		
Q716 Q8A2 Q8A4		
Q8A6 Q8A8 Q807		
Q861 Q862 Q952		
Q957		
Q701 Q702 Q703	350H1811	TR,2SC2901 K-T
Q704 Q705 Q706		
Q710 Q726 Q727		
Q728 Q731 Q733		
Q740 Q741 Q742	350H4417	TR,2SC1473-TA Q
Q7C0	350H5017	TR,2SC3811-TA Q
Q5A1 Q5R2 Q502	350H5018	TR,2SC3811-TA R
Q806		
Q954	350K4311	TR 2SA953-T K
⚠Q5E2	350K4411	TR 2SA952 K,AT
Q5A3	350K4412	TR 2SA952 L,AT
⚠Q2001 Q5G5 Q5M2	350K4518	TR 2SA933-T R
Q5R4 Q501 Q56E		
Q573		
Q743 Q744 Q745	350K5217	TR,2SA1018-TA Q
Q5G1 Q5G3 Q5M0	350K5718	TR 2SA933S-T R
Q5S1 Q711 Q712		
Q713 Q8A3 Q8A7		
Q863 Q864 Q951		
Q732	350K7500	TR 2SA1206-T
Q956	35011600	TR 2SA1831
Q451	35025211	TR 2SB546 K
Q571	35025212	TR 2SB546 L
Q5A2 ⚠Q5E1	35050918	TR 2SC1384 R
⚠Q651	35053012	TR 2SC1941 L
Q481	35056311	TR 2SC2688 K
Q482	35058905	TR,2SC1841 E
Q452	35063411	TR,2SD401A K
Q461 Q471 Q8A1	35065416	TR,2SD882 P
Q8C0		
Q723 Q724 Q725	35080200	TR 2SC2407/2407A
Q958	35084600	TR,2SC3675
Q953 Q955	35094200	TR 2SC4572
⚠Q581	35094300	TR 2SC3998
Q422 Q423 Q424	351A0690	TR DTC115ES-TP
Q425		
⚠Q5E4	351G0553	TR DTA143ES-T
Q56A Q56C Q59A	351G0560	TR DTA144WS-T
Q59E		
Q708 Q8G0 Q8G1	351G0600	TR DTA114ES-T
⚠Q2005 ⚠Q2006 Q5G0	351G0601	TR DTC114ES-T
Q5R0 Q707 Q709		
Q719 Q734 Q8A5		
Q8G2 Q8G4 Q802		
Q803 Q804 Q805		
⚠Q5E0 Q50A Q51A	351G0602	TR DTC144ES-T
Q52A Q53A Q54A		
Q55A Q58A Q59C		
Q59F Q717 Q718		
Q8G3		
Q801	351G0641	TR DTC114YS-T
⚠Q654	351G0653	TR DTC123ES-T
Q2101 Q5R1	351G0655	TR DTC143ES-TP
Q5G6 Q5M3 Q574	35122500	TR 2SK758
Q8A9	35122600	TR 2SK701
⚠Q5A4 ⚠Q5A5	35122800	TR 2SK1271
Q591 Q592 Q593	35125700	TR 2SK947

SYMBOL	PARTS NO	DESCRIPTION
Q594 Q595 Q596	35125700	TR 2SK947
⚠Q601	35125800	TR,2SK1342
⚠Q5E3	35126900	TR 2SK806
Q860	35560416	TR 2SD794A P
⚠CR601	35595015	TRIAC AC10FGM

*** DIODES ***

SYMBOL	PARTS NO	DESCRIPTION
⚠D605	360K1010	DIODE,SI.1S2472
D101 D102 D103 D104 D105 D106 D107 D108 D109 D110 D111 D112 D113 D114 D115 D116 ⚠D2003 ⚠D2006 ⚠D2008 ⚠D2101 D2102 D2103 D401 D5A0 D5A1 D5A3 ⚠D5E1 D5G0 D5G1 D5G2 D5G4 D5G5 D5G6 D5M0 D5M2 D5M3 D5M4 D5R1 D501 D502 D591 D592 ⚠D654 ⚠D655 D7G0 D701 D702 D703 D704 D705 D706 D707 D708 D709 D710 D711 D712 D713 D714 D715 D716 D717 D718 D719 D720 D721 D722 D723 D725 D726 D727 D728 D729 D730 D8A1 D8A2 D8A3 D8A4 D8A5 D8A6 D8G0 D8G1 D8G2 D8G3 D8G4 D8G5 D8G6 D8G7 D8G8 D8G9 D8H2 D8H3 D8H4 D803 D804 D805 D806 D860 D861 D862 D863 D864 D901 D951 D952 D953 D954	360K1027	DI 1SS132 AT52
D482 D491 D755 D756 D757 D758 D759 D760 D761 D762 D763 D902	360K1032	DIODE 1SS82-TA
ZD801	360K3087	DIODE RD3.0EB-T4
ZD860	360K3114	DIODE 8.2EB(1)
ZD452	360K3118	DIODE RD10EB(1)-T4
⚠ZD653	360K3123	DIODE RD20EB(3)
⚠ZD652	360K3124	DIODE RD8.2EB (3)-T4
ZD471 ZD5A1 ⚠ZD5E1 ZD571	360K3134	DIODE RD15EB(2)-T4
ZD5R1	360K3145	DIODE RD27EB-T4
ZD5A0	360K3157	DIODE RD5.1EB(3)-T4
ZD503	360K3160	DIODE RD8.2EB(2)-T4
ZD5R2	360K3161	DIODE RD12EB(2)-T4
ZD8A3	360K3169	DIODE RD6.2EB(2)-T4

SYMBOL	PARTS NO	DESCRIPTION
ZD461 ZD561 ZD591 ZD592	360K3170	DIODE RD6.2JSB(2)/JSAB(2)
ZD502	360K3188	DIODE RD3.9EB(2)-T4
ZD711 ZD712 ZD713	360K3300	DIODE RD2.0EB(1)-T4
ZD5A2	360K3326	DIODE RD18EB(3)-T4
ZD501	360K3403	DIODE RD5.1JSB(1)-T4
⚠ZD2001 ⚠ZD2002	360K3416	DIODE RD5.1JSB(2)-T4
ZD951	360K3605	DIODE RD2.2ESB(1)-T4
ZD401	360K3617	DIODE RD3.3ESB(1)-T4
ZD5G2	360K3624	DIODE RD3.9ESB(2)-T4
ZD8A4	360K3634	DIODE RD5.1ESB(1)-T4
⚠ZD5E0	360K3635	DIODE RD5.1ESB(2)-T4
ZD803	360K3637	DIODE RD5.6ESB-T4
⚠ZD2101	360K3647	DIODE RD6.8ESB(2)-T4
ZD5G0 ZD710 ZD8A1	360K3654	DIODE RD8.2ESB(1)-T4
⚠ZD5D1	360K3655	DIODE RD8.2ESB(2)/ESAB(2)
ZD5G3	360K3656	DIODE RD8.2ESB(3)-T4
ZD5G1	360K3658	DIODE RD9.1ESB(1)-T4
⚠ZD5E4	360K3675	DIODE RD13ESB(2)-T4
⚠ZD5E2	360K3680	DIODE RD15ESB(3)-T4
ZD8A2	360K3683	DIODE RD16ESB(2)-T4
⚠ZD651	360K3721	DIODE RD36ESB(3)-T4
⚠D602	361K7303	DIODE EU02 V1
⚠D5A2	361K7312	DIODE EP01C-V
⚠D604	361K7322	DIODE EL1Z-T
⚠D5E2 ⚠D5E4 ⚠D572 D590 D8A9 D8C0	361K7562	DIODE EGP10G G23
D5M5	361K7637	DIODE EGP20G G23
MD801 MD802	361K8233	DIODE DAN209S-TP
⚠D603	36107174	DIODE RU1P
⚠D656	36107178	DIODE RU3
D573 D574 D8A7	36107293	DIODE RK14
⚠D651 ⚠D652	36107320	DIODE FMG-G26S
⚠D5D1 ⚠D5E3	36107541	DIODE EG01A
⚠D583 ⚠D584	36107560	DIODE RG2A2
D5G7	36107638	DIODE EGP30G
⚠D653	36108072	D,NETWORK D5LCA20
⚠D601	36108201	DIODE,NETWORK D5SBA60S
⚠D582	36108238	DIODE FMP-G3FS
ZD802	367K0017	DIODE RD4.7EB-T4
ZD861	367K0048	DIODE RD5.1FB(2)
D120	36801340	LED SLR-34MC3F
D121 D122	36801343	LED SLA-570MT3F(XJ,XK,XL)
D402 D481 D5G3 D5G8 D731 D732 D8C3 D8C4	369K2136	DIODE RGP10G,AT
ZD451	369K5512	DIODE,ZENER RD18JSB2
⚠TH601	38112058	THERMISTOR,POSITIVE
⚠PC601 ⚠PC602	38200233	IC TLP634(NHE-LF2)

*** TRANSFORMERS ***

SYMBOL	PARTS NO	DESCRIPTION
T571	45804008	TRANS,H.DRIVE
L5M1	46206005	TRANS,CHOKE 4MH
L5G1	46206006	TRANS,CHOKE 2MH
T5G0 T5M0	46302105	TRANS,FERRITE

SYMBOL	PARTS NO	DESCRIPTION
T8A1	46304111	TRANS,CONVERTER
⚠T601	46311405	TRANS,SWITCHING W345
⚠T5A1	47105678	F.B.T.(SR)
⚠T581	47710017	TRANS,H.OUTPUT
*** VARIABLE RESISTORS ***		
VR8A1	410G1207	R,VARIABLE B1.0K
VR701 VR702 VR703	410G1210	R,VARIABLE B3.3K
VR861	410G1211	R,VARIABLE B4.7K
VR860	410G1213	R,VARIABLE B10K
VR801 VR802	410G1415	R,VARIABLE B22K-T
VR101 VR102	41011106	R,VARIABLE B10K-V
VR411	41085005	R,VARIABLE B1K
VR401 VR421 VR590 VR951	41085009	R,VARIABLE B10K
VR441 VR56A	41085012	R,VARIABLE B50K
VR431 VR56C VR56E VR901 VR952	41085014	R,VARIABLE B200K
VR461	41085056	R,VARIABLE B2K
VR5U1 VR5W1	41085059	R,VARIABLE B10K
VR5S2	41085066	R,VARIABLE B500K
VR720 VR721 VR722 VR723 VR724 VR725	415K5159	R,VARIABLE B20K
⚠VR5D1	41505005	R,VARIABLE B2K
⚠VR2001 ⚠VR5E1	41505007	R,VARIABLE B5K
⚠VR651	41505103	R,VARIABLE B500
*** RELAYS & SWITCHES ***		
SW111 SW401	65161048	SWITCH,SLIDE
SW112	65161059	SWITCH,SLIDE 1-6L-3NS
SW701	65161062	SWITCH,SLIDE 2-6L-2NS
SW101 SW102 SW103 SW104 SW105 SW106 SW107 SW108 SW109 SW110	653F0031	SWITCH,PUSH BUTTON
	65360029	SWITCH,PUSH BUTTON
RL590 RL591	65660004	RELAY G6C-1114P-US
⚠RL601	65660019	RELAY G5P-1(24V)
*** COILS & FILTERS ***		
MR802	390C0151	R,NETWORK 8*10K 5% 1/8W
MR801	390C9804	R,NETWORK
MR803 MR804 MR805 MR806 MR807	390C9805	R,NETWORK 4*1.0K 5% 1/6W
MC801 MC802 MC803 MC804	39013042	C,CERAMIC 25V 0.01UF
⚠L591 ⚠L592	60919121	COIL,H.LIN. N-59 (16T)
⚠L590	60919122	COIL,H.LIN. N-60 (10T)
L5S1	610E1717	COIL,FILTER 10UH
L710 L711 L712	610E1726	COIL,FILTER 56UH
⚠L602	610F5002	FERRITE BEADS (B-02-RT)
L720 L721 L722	610F6014	COIL,FILTER 5.6UH
L901 L902 L903	610F7619	COIL,FILTER 0.15UH
L8A5	61055001	COIL,FILTER 8500UH
	61062076	POWER LINE FILTER

SYMBOL	PARTS NO	DESCRIPTION
⚠FL601 FL602	61062102	COIL,LINE FILTER 8.2MH
⚠L5E1 L5G0 L5G2 ⚠L5M0 L8A1 L8A2	61064006	COIL,FILTER 50UH
⚠L594	61070135	FILTER CHOKE 4MH
⚠L601	61072349	COIL,FILTER
L704	61099011	COIL,CHOKE 33UH
⚠L653	61099013	COIL,CHOKE 10UH
⚠L652	61099014	COIL,CHOKE 33UH
⚠L593	61099019	COIL,CHOKE 10MH
⚠L651	61099036	FILTER CHOKE
L8A3	61099047	FILTER CHOKE
DEG	61321205	COIL,DEGAUSSING
LC901	616K6028	NOISE FILTER 1H223X-TA
LC701 LC702 LC703 LC704	616K6801	NOISE FILTER 2R2-101-T
LC711 LC712 LC713 LC714 LC715 LC902	616K6946	NOISE FILTER TH28123MA
LC708 LC709 LC710	616K6964	NOISE FILTER TX07250NBT
LC705 LC706 LC707	616K6965	NOISE FILTER TX09500NBT
*** PWB ASSYS ***		
	84N68A01	SW.REG PWB ASSY
	84N68C01	VIDEO PWB ASSY
	84N68D01	DEF PWB ASSY
	84N68J01	CRT PWB ASSY
	84N68M03	CPU PWB ASSY
	84N68S02	SDP PWB ASSY
	84N68T02	TR PWB ASSY
*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***		
HS2	31709105	SHEET,HEAT SINK
HS1	31709204	SHEET,HEAT SINK
HS582	31709503	SHEET,INSULATOR
HS581	31709507	SHEET,INSULATOR HEAT SINK
HS3	31709612	SHEET INSULATOR M-45
HS5A4	31709614	SHEET,INSULATOR M-45
SG901 SG902 SG903 SG904	329J0047	ARRESTER (300V),AT52
X801	64098031	X'TAL 12000KHZ
⚠F601 ⚠F651	66671027	FUSE 250V 4A
SG951	667K7001	SPARK GAP 1.2KV
SG905	66706002	SPARK GAP 1.5KV
	70032054	SG/CRT SOCKET(DBF)
	70051321	RECEPTACLE 1P
CN-D2	70056398	MINI D-SUB COCKET 15PV
CN-D1	70056399	D-SUB SOCKET 15PV
	70800324	LINE,POWER
	71205037	HOLDER,FUSE
	73893105	CABLE,SIGNAL D15P-MD15P
	74004891	CAP
*** APPEARANCE PARTS ***		
	25282981	SCREW REVET
	25283511	JOINT
	25314021	CABINET BACK(A) ASSY

SYMBOL	PARTS NO	DESCRIPTION
	25314041	CABINET BACK(B) ASSY
	25314062	CABINET BOTTOM
	25314151	CABINET FRONT ASSY
	25419341	HOOK (B)
	25419402	REVOLVING SPINDLE
	25419491	ESCUTCHEON
	25419501	REVOLVING STAND ASSY
	25421111	LID CONTROL ASSY
	25534631	COIL SPRING
	25607291	SLIDE SHEET
	25612281	FOOT RUBBER (D21)
	25757643	LABEL(REV.)
	25775231	NAME PLATE,INSTRUCTION
	25775701	LABEL (CONTROL)
	25775751	LABEL (EE)
	25776261	LABEL (ESCUTCHEON)

*** KNOBS & PUSH BUTTONS ***

SYMBOL	PARTS NO	DESCRIPTION
	25454691	KNOB,SLIDE
	25454741	PUSH BUTTON (SW)
	25454752	KNOB,CONTROL

*** PRINTED & PACKING MATERIALS ***

SYMBOL	PARTS NO	DESCRIPTION
	24813191	BAG,POLYETHYLENE(150*370)
	24814531	BAG,POLYEHYLENE (180*350)
	25815061	BAG,POLYETHYLENE (270X370
	25822831	SHEET PROTECTION
	25823512	CARTON BOX(B)
	25823522	FILLER T,CARTON
	25823532	FILLER B,CARTON
	25826333	CARTON BOX(T)(JC-2141UMB)
	25826571	CORNER ANGLE
	78034407	**MONITOR SALES OFFICE LIST**
	78126012	USER'S MANUAL (5FG/6FG)B
	78652212	TEMPLATE B

*** RESISTORS ***

SYMBOL	PARTS NO	DESCRIPTION
R406	401C6609	R,CARBON 2.2H 5% 1/4W
R583 R584	401C6651	R,CARBON 120H 5% 1/4W
⚠R668	401C6657	R,CARBON 220H 5% 1/4W
⚠R667 R834	401C6665	R,CARBON 470H 5% 1/4W
R124	401C6667	R,CARBON 560H 5% 1/4W
R5R6	401C6669	R,CARBON 680H 5% 1/4W
R578	401C6677	R,CARBON 1.5K 5% 1/4W
R911	401C6689	R,CARBON 4.7K 5% 1/4W
⚠R5E8	401C6691	R,CARBON 5.6K 5% 1/4W
⚠R5AA ⚠R5AC	401C6745	R,CARBON 1.0M 5% 1/4W
R8C4	401C6761	R,CARBON 4.7M 5% 1/4W
⚠R5GA	401G6127	R,CARBON 12H 5% 1/4W
⚠R491	401G6173	R,CARBON 1.0K 5% 1/4W
⚠R5N1	401G6185	R,CARBON 3.3K 5% 1/4W
⚠R5D4	401G6191	R,CARBON 5.6K 5% 1/4W
⚠R5A9	401G8137	R,CARBON 33H 5% 1/2W
R904 R905 R906	*401H5645*	*R,CARBON 68H 5% 1/2W*

SYMBOL	PARTS NO	DESCRIPTION
R790 R791 R792	401H5657	R,CARBON 220H 5% 1/2W
R725 R726 R727	401H5661	R,CARBON 330H 5% 1/2W
⚠R619	401H5667	R,CARBON 560H 5% 1/2W
R985	401H5677	R,CARBON 1.5K 5% 1/2W
R8A4	401H5681	R,CARBON 2.2K 5% 1/2W
R8A1	401H5683	R,CARBON 2.7K 5% 1/2W
⚠R655	401H5705	R,CARBON 22K 5% 1/2W
R974 R975	401H5731	R,CARBON 270K 5% 1/2W
⚠R601	401H5737	R,CARBON 470K 5% 1/2W
⚠R5N5	401H5741	R,CARBON 680K 5% 1/2W
⚠R603	401H5745	R,CARBON 1.0M 5% 1/2W
⚠R5E7 R524 R7F4	401J9820	RD16Z,0H,AT52
R7F5 R8F9 R865		
R50F R51C R54F	401K5601	R,CARBON 1H 5% 1/6W
R56X		
R5K6 R909	401K5633	R,CARBON 22H 5% 1/6W
R7C0 R7C1 R7C2	401K5639	R,CARBON 39H 5% 1/6W
R5N2	401K5641	R,CARBON 47H 5% 1/6W
R8D0	401K5643	R,CARBON 56H 5% 1/6W
R970	401K5647	R,CARBON 82H 5% 1/6W
⚠R2011 R408 R57E	401K5649	R,CARBON 100H 5% 1/6W
R59A R59C R59E		
R59F R59G R59W		
⚠R662 R7A0 R7A1		
R7A2 R7G1 R750		
R751 R752 R910		
R966		
R719 R720 R721	401K5653	R,CARBON 150H 5% 1/6W
R722 R723 R724		
R760 R761 R762		
R784 R785 R786		
R110 R8E7	401K5655	R,CARBON 180H 5% 1/6W
R56S ⚠R615 R8F4	401K5657	R,CARBON 220H 5% 1/6W
R2102 R513 R802	401K5659	R,CARBON 270H 5% 1/6W
R56M R58C R7G0	401K5661	R,CARBON 330H 5% 1/6W
R7A3 R7A5 R7A7	401K5663	R,CARBON 390H 5% 1/6W
R781 R782 R783	401K5665	R,CARBON 470H 5% 1/6W
R8C6		
R596 R598 R8L3	401K5667	R,CARBON 560H 5% 1/6W
R121 ⚠R672 R756	401K5669	R,CARBON 680H 5% 1/6W
R757 R758 R8E6		
R8H0		
R775 R777 R779	401K5671	R,CARBON 820H 5% 1/6W
R111 R409 R454	401K5673	R,CARBON 1.0K 5% 1/6W
R455 R5A8 ⚠R5EA		
⚠R5E4 ⚠R5E5 R5W4		
R5W5 R516 R53L		
R535 ⚠R605 ⚠R674		
R738 R787 R788		
R789 R8K8 R8K9		
R810 R811 R832		
R857 R858 R859		
R86A R86C R871		
R873 R877 R878		
R879 R880 R882		
R956 R957		
R511 ⚠R659 R8H6	401K5675	R,CARBON 1.2K 5% 1/6W
R8H8		
R474 R5A7 ⚠R5D3	401K5677	R,CARBON 1.5K 5% 1/6W

SYMBOL	PARTS NO	DESCRIPTION
R528 ⚠R657 ⚠R658	401K5677	R,CARBON 1.5K 5% 1/6W
R8G9 R8H2		
R5R5 R793 R971	401K5679	R,CARBON 1.8K 5% 1/6W
R407 R466 R57K	401K5681	R,CARBON 2.2K 5% 1/6W
R7G2 R7G3 R731		
R732 R735 R736		
R737 R739 R8C1		
R8C2 R816 R983		
R5A0 R5A4 R5A5	401K5683	R,CARBON 2.7K 5% 1/6W
⚠R5E0 R5U7 R8H7		
R801 R870 R876		
⚠R201G R411 R5X6	401K5685	R,CARBON 3.3K 5% 1/6W
R52F R59L R59S		
R59T R590 R595		
R597 R707 R709		
R711 R713 R715		
R717 R776 R778		
R780 R8G4 R8G5		
R8G6 R8G7 R8G8		
R8H1 R8H5 R8H9		
R8L0 R8L1 R863		
R872 R965		
R463 R5K5 R5N0	401K5687	R,CARBON 3.9K 5% 1/6W
R50K R51K R52K		
R53K R54K R55K		
R58K R7A4 R7A6		
R7A8 R7G4 R8E0		
⚠R201M R401 R462	401K5689	R,CARBON 4.7K 5% 1/6W
R5H1 R5R4 R533		
⚠R663 R763 R8K4		
R8K5 R866		
⚠R2006 R465 ⚠R5D2	401K5691	R,CARBON 5.6K 5% 1/6W
⚠R5E1 ⚠R5E9 R5Y4		
R520 R7C4 R7C6		
R7C8 R8E1 R8G0		
R8G2 R8K0 R8K1		
R8K2		
R120 ⚠R201H R5G1	401K5693	R,CARBON 6.8K 5% 1/6W
R5G5 R5K7 R5M0		
R5N1 R5T6 R514		
R745 R803 R818		
R5H4 R7E2 R7E3	401K5695	R,CARBON 8.2K 5% 1/6W
R7E4 R8A9 R862		
R864 R869		
⚠R2007 ⚠R201K ⚠R2010	401K5697	R,CARBON 10K 5% 1/6W
⚠R2020 R464 R475		
R5G2 R5M8 R5S3		
R5S4 R5T1 R5T2		
R5T4 R5U0 R5U2		
R5U3 R5X1 R5X4		
R5Y3 R50M R504		
R505 R515 R526		
R527 R529 R53S		
R544 R569 ⚠R652		
R7E5 R7E6 R7E7		
R7F3 R708 R710		
R712 R714 R716		
R718 R742 R744		
R764 R765 R766		
R767 R768 R769		
R772 R773 R774		
R8A2 R8A3 R8C0		

SYMBOL	PARTS NO	DESCRIPTION
R8C7 R8F8 R805	401K5697	R,CARBON 10K 5% 1/6W
R807 R808 R809		
R850 R851 R852		
R867 R868 R874		
R884 R907 R913		
R951 R952 R979		
R982 R984 R987		
⚠R2013 R402 R420	401K5699	R,CARBON 12K 5% 1/6W
⚠R5E2 R5G4 R5R0		
R5R7 R512 R523		
R59N R741 R743		
R886 R964		
R2104 R421 R5H0	401K5701	R,CARBON 15K 5% 1/6W
⚠R614 ⚠R670 R8A5		
R8A6 R8K3 R817		
R5X7	401K5703	R,CARBON 18K 5% 1/6W
⚠R201L R404 R5H5	401K5705	R,CARBON 22K 5% 1/6W
R5M2 R5T7 R5U9		
R5W9 R522 ⚠R613		
⚠R660 R7F0 R7F1		
R7F2 R730 R734		
R8A8 R8C3 R8K6		
R976 R978		
R424 R451 R5T3	401K5707	R,CARBON 27K 5% 1/6W
R5U6 R5Y6 R50T		
R52T R53T R54T		
R55T R58T R981		
R989		
⚠R2012 R2101 R423	401K5709	R,CARBON 33K 5% 1/6W
R5C4 ⚠R5D5 R5H8		
R5M6 R503 R509		
R531 R532 R534		
R568 R7D9 R7E0		
R7E1 R853 R854		
R855 R856 R885		
R955 R962		
⚠R200A ⚠R200C ⚠R201E	401K5711	R,CARBON 39K 5% 1/6W
R422 R443 R482		
R837		
R5A3 R5H2 R5H3	401K5713	R,CARBON 47K 5% 1/6W
R5S8 R5T0 ⚠R669		
R7C3 R7C5 R7C7		
R806 R914 R954		
R980		
⚠R200F R436 R437	401K5715	R,CARBON 56K 5% 1/6W
R483 R5M7 R56G		
R56H R8F2 R958		
R960		
R450 R5S7 R5S9	401K5717	R,CARBON 68K 5% 1/6W
R5Y5 R502 ⚠R671		
R5H7 R5T8 R56T	401K5719	R,CARBON 82K 5% 1/6W
R59M R7D6 R7D7		
R7D8 R835		
⚠R2008 ⚠R201F R431	401K5721	R,CARBON 100K 5% 1/6W
R433 R434 R435		
R452 R453 R5G7		
R5U1 R5U8 R5W2		
R5W3 R5X5 R56C		
R58H ⚠R620 R8H3		
R961 R986		
R484 R5K3 R5M3	401K5723	R,CARBON 120K 5% 1/6W
R56A R56F R953		
⚠R2009 R5S6 R56E	401K5725	R,CARBON 150K 5% 1/6W

SYMBOL	PARTS NO	DESCRIPTION
R7D3 R7D4 R7D5		
R50H R50L R8A7	401K5727	R,CARBON 180K 5% 1/6W
R5G8 R5W0 R7D0	401K5729	R,CARBON 220K 5% 1/6W
R7D1 R7D2 R8G1		
R8G3 R8K7 R988		
R438 R56W R836	401K5731	R,CARBON 270K 5% 1/6W
R5N7 R7F6 R7F7	401K5733	R,CARBON 330K 5% 1/6W
R7F8		
R51H	401K5735	R,CARBON 390K 5% 1/6W
R5G3 R52H R912	401K5737	R,CARBON 470K 5% 1/6W
R959		
R53H R8C5	401K5743	R,CARBON 820K 5% 1/6W
R5G9 R5M5 R54H	401K5745	R,CARBON 1.0M 5% 1/6W
R8C8		
R55H	401K5747	R,CARBON 1.2M 5% 1/6W
R492 R908	401K5749	R,CARBON 1.5M 5% 1/6W
⚠R201D ⚠R210C	401K5753	R,CARBON 2.2M 5% 1/6W
R501	401K5757	R,CARBON 3.3M 5% 1/6W
R5G6	40175101	R,CARBON 1H 5% 1/4W
⚠R5C1 ⚠R5C2 ⚠R612	40175125	R,CARBON 10H 5% 1/4W
⚠R5M1	40175127	R,CARBON 12H 5% 1/4W
⚠R611	40175145	R,CARBON 68H 5% 1/4W
R581 R582	40298004	R,WIRE 1.0H 1% 5W
⚠R602	40298005	R,WIRE 15H 5% 7W
R8F6	403F1121	R,METAL OXIED 6.8H 5% 1W
R8F7	403F1131	R,METAL OXIED 18H 5% 1W
⚠R57T	403F1137	R,METAL 33H 5% 1W
R405	403F1165	R,METAL 470H 5% 1W
R5A6 ⚠R5E3	403F1173	R,METAL OXIED 1.0K 5% 1W
R5A1	403F1177	R,METAL OXIDE 1.5K 5% 1W
R410	403F2101	R,METAL 1.0H 5% 2W
R8F0	403F2103	R,METAL OXIDE 1.2H 5% 2W
R8F3	403F2109	R,METAL 2.2H 5% 2W
R8F5	403F2113	R,METAL OXIDE 3.3H 5% 2W
R883	403F2149	R,METAL OXIDE 100H 5% 2W
R7G5 R8E4 R8E5	403F2151	R,METAL OXIDE 120H 5% 2W
R476 R477	403F2169	R,METAL OXIDE 680H 5% 2W
R519	403F2171	R,METAL 820H 5% 2W
R8F1	403F3137	R,METAL OXIDE 33H 5% 3W
⚠R599	403F3141	R,METAL OXIDE 47H 5% 3W
R456 R457	403F3143	R,METAL OXIDE 56H 5% 3W
R861	403F3159	R,METAL OXIDE 270H 5% 3W
R521	403F3163	R,METAL OXIDE 390H 5% 3W
⚠R5D6	403F3173	R,METAL OXIDE 1.0K 5% 3W
⚠R57V	403F3177	R,METAL OXIDE 1.5K 5% 3W
R967 R968	403F3209	R,METAL OXIDE 33K 5% 3W
⚠R5D7	40318994	R,METAL 2.2K 5% 5W
⚠R656	40372135	R,METAL 27H 5% 2W
⚠R604	40372151	R,METAL 120H 5% 2W
⚠R666	40372175	R,METAL 1.2K 5% 2W
⚠R665	40372197	R,METAL 10K 5% 2W
⚠R607	40372211	R,METAL 39K 5% 2W
⚠R664	40372213	R,METAL 47K 5% 2W
⚠*R606*	*40372219*	*R,METAL 82K 5% 2W*
⚠R608	40372329	R,METAL 0.22H 5% 2W

SYMBOL	PARTS NO	DESCRIPTION
⚠R651 ⚠R654	40373135	R,METAL 27H 5% 3W
⚠R610	40373141	R,METAL 47H 5% 3W
⚠R616 ⚠R617	40373219	R,METAL 82K 5% 3W
R8E8	40399049	R,METAL 82H 5% 3W
R701 R702 R703	404C1646	R,METAL 75H 1% 1/6W
R704 R705 R706		
R795 R796 R797	404C1653	R,METAL 150H 1% 1/6W
R50C	404C1675	R,METAL 1.2K 1% 1/6W
⚠R2018	404C1677	R,METAL 1.5K 1% 1/6W
R58F	404C1681	R,METAL 2.2K 1% 1/6W
R122 R537 ⚠R661	404C1683	R,METAL 2.7K 1% 1/6W
R5A2	404C1685	R,METAL 3.3K 1% 1/6W
R51F R58A ⚠R653	404C1689	R.METAL 4.7K 1% 1/6W
R123	404C1691	R,METAL 5.6K 1% 1/6W
R403 R8H4	404C1694	R,METAL 7.5K 1% 1/6W
R52C	404C1695	R,METAL 8.2K 1% 1/6W
⚠R2019 R5X0 R50A	404C1697	R,METAL 10K 1% 1/6W
R56R R729 R8E2		
R8E3 R840 R843		
R846 R849		
R472 R53C R58G	404C1699	R,METAL 12K 1% 1/6W
R5S5 R50G R536	404C1703	R,METAL 18K 1% 1/6W
R576 R579		
R5F4 R51G R53F	404C1705	R,METAL 22K 1% 1/6W
R538 R573 R577		
R425 R51A R54C	404C1707	R,METAL 27K 1% 1/6W
R52G R55C	404C1709	R,METAL 33K 1% 1/6W
R5U4 R5U5	404C1710	R,METAL 36K 1% 1/6W
R447 R52A R53G	404C1711	R,METAL 39K 1% 1/6W
R55F		
R471 R5S0	404C1713	R,METAL 47K 1% 1/6W
R445 R5X2 R5X3	404C1715	R,METAL 56K 1% 1/6W
R56L R572		
R426 R429 R5F3	404C1717	R,METAL 68K 1% 1/6W
R510 R57A		
R473	404C1719	R,METAL 82K 1% 1/6W
⚠R2001 R5F8 R5S1	404C1721	R,METAL 100K 1% 1/6W
R5S2 R5X9 R5Y1		
R5Y2 R50E R507		
R51E R52E R53A		
R53E R54E R54G		
R55E R56K R58E		
R838 R841 R844		
R847		
R55G R574	404C1723	R,METAL 120K 1% 1/6W
R839 R842 R845	404C1724	R,METAL 130K 1% 1/6W
R848		
R5N9 R54A	404C1725	R,METAL 150K 1% 1/6W
R428 R440 R442	404C1727	R,METAL 180K 1% 1/6W
R446 R5X8 R508		
R430 R444 R506	404C1729	R,METAL 220K 1% 1/6W
R55A R571 R575		
R427	404C1737	R,METAL 470K 1% 1/6W
R441	404C1743	R,METAL 820K 1% 1/6W
R439	404C1745	R,METAL 1.0M 1% 1/6W
⚠R5C3 ⚠R5D1 ⚠R5F9	404K5109	R,METAL 2.2H 5% 1/4W
⚠R57H ⚠R570		

SYMBOL			PARTS NO	DESCRIPTION
⚠R461	⚠R591		404K5117	R,METAL 4.7H 5% 1/4W
⚠R481	⚠R5F2	⚠R860	404K5125	R,METAL 10H 5% 1/4W
⚠R5F0	⚠R57F	⚠R57L	404K5141	R,METAL 47H 5% 1/4W
⚠R5R8			40405125	R,METAL 10H 5% 1/4W
⚠R5N3			408A8107	R,FUSE 1.8H 5% 1/2W
⚠R592	⚠R593	⚠R594	408A8157	R,FUSE 220H 5% 1/2W
⚠R57G			409A6149	R,FUSE 100H 5% 1/4W

*** CAPACITORS ***

SYMBOL			PARTS NO	DESCRIPTION
C903			420C9551	C,CERAMIC 500V 100PF
C481	C5G8	⚠C591	420C9563	C,CERAMIC 500V 1000PF
⚠C592	⚠C593	C7A6		
C7A7	C7A8	C904		
C574			420C9567	C,CERAMIC 500V 2200PF
C7E9	C796	C797	420C9569	C,CERAMIC 50V 3300PF
C798				
C901			4203J575	C,CERAMIC 500V 0.01UF
C905			42040108	C,CERAMIC 2KV 0.01UF
⚠C603	⚠C604		42053069	C,CERAMIC 400V 3300PF
⚠C609	⚠C617		42053071	C,CERAMIC 400V 4700PF
⚠C658			42099086	C,CERAMIC 2KV 1000PF
⚠C611	⚠C618		42099088	C,CERAMIC 2KV 220PF
⚠C651	⚠C655		42099095	C,CERAMIC 2KV 330PF
⚠C607	⚠C614		42099096	C,CERAMIC 2KV 470PF
C451	C518	C521	421A0425	C,CERAMIC 50V 0.01UF
C530	C57A	C810		
C811				
C5R1			421C0205	C,CERAMIC 50V 220PF
C401	C762	C763	421C0213	C,CERAMIC 50V 1000PF
C764	C777	C778		
C779	C8A9	C867		
C737	C738	C739	421C0219	C,CERAMIC 50V 3300PF
C5G1	C7D4	C7D5	421C0225	C,CERAMIC 50V 0.01UF
C7D6	C707	C708		
C709	C710	C711		
C712	C718	C719		
C720	C759	C760		
C761	C768	C769		
C770	C784	C785		
C786	C790	C791		
C792				
C86A	C86C		421C3461	C,CERAMIC 16V 0.01UF
C5S1	C5S8	C5S9	421D6009	C,CERAMIC 25V 0.1UF
C5T0	C5T1	C5T2		
C5X0	C504	C59E		
C59F	C59G	C59H		
C59K	C59M	C7E5		
C7E6	C7E7	C7E8		
C7F0	C7F1	C7F2		
C714	C716	C753		
C754	C755	C8A8		
C8H7	C8K3	C8K4		
C8K7	C8K8	C8K9		
C802	C826	C827		
C829	C830	C834		
C835	C864	C865		
C868	C869	C870		
C958	C965			
C200P	C2021	C406	421D6013	C,CERAMIC 50V 0.1UF

SYMBOL			PARTS NO	DESCRIPTION
C47P	C471	C5A5	421D6013	C,CERAMIC 50V 0.1UF
C5EP	C50A	C50R		
C50S	C507	C51C		
C51P	C56A	C56C		
C57P	C8C7	C8C8		
C5X1			421J9036	C,CERAMIC 25V 0.1UF
C8A1			423A1028	C,CERAMIC 50V 20PF
C509	C717		423A1045	C,CERAMIC 50V 100PF
C5G3	C8G9	C8K0	423A1057	C,CERAMIC 50V 330PF
C8K1	C8K2			
⚠C616			423A1100	C,CERAMIC 50V 390PF
C5G5	C5M0	C8K5	423A1101	C,CERAMIC 50V 470PF
C962				
C959			423A1103	C,CERAMIC 50V 560PF
C7D1	C7D2	C7D3	423A2015	C,CERAMIC 50V 10PF
C804	C805			
C820			423A2025	C,CERAMIC 50V 15PF
C5G0	C506	C787	423A2033	C,CERAMIC 50V 33PF
C788	C789			
⚠C5E2			423A2037	C,CERAMIC 50V 47PF
C781	C782	C783	423A2043	C,CERAMIC 50V 82PF
C529	C549	C966	423A2045	C,CERAMIC 50V 100PF
C5M5	C502	C510	423A2103	C,CERAMIC 50V 180PF
C511			423A2105	C,CERAMIC 50V 270PF
C515			427A7005	C,FILM 100V 0.0022UF
C8A6			427F4004	C,FILM 50V 1800PF
C8A7	C8H0		427F4009	C,FILM 50V 4700PF
⚠C5EA	⚠C5E6	C500	427F4013	C,FILM 50V 0.01UF
C8A5	C951	C957		
C516			427F4014	C,FILM 50V 0.012UF
C5G6			427F4021	C,FILM 50V 0.047UF
C5M2			427F4025	C,FILM 50V 0.1UF
⚠C5D2			427F4059	C,FILM 50V 4700PF
C412			427F4067	C,FILM 50V 0.022UF
C5G2			427F4601	C,FILM 50V 1000PF
C513			427F4603	C,FILM 50V 1500PF
C8D0			427F4605	C,FILM 50V 2200PF
C520			427F4610	C,FILM 50V 5600PF
C59N			427F4613	C,FILM 50V 0.01UF
C866			427F4617	C,FILM 50V 0.022UF
C5H7	C5H8	C5M4	427F4621	C,FILM 50V 0.047UF
C5M8				
⚠C661			427F4624	C,FILM 50V 0.082UF
C512	C578		427F4651	C,FILM 50V 1000PF
C955	C956	C963	427F4675	C,FILM 50V 0.1UF
C5A2	C5A3		427J9112	C,FILM 50V 1000PF
⚠C5D1			42703455	C,FILM 630V 2200PF
⚠C577			42703575	C,FILM 200V 0.1UF
⚠C664			42799057	C,FILM 100V 3300PF
C441	C442	⚠C606	428B3013	C,METAL FILM 50V 0.1UF
⚠C662	C8G0	C8G2		
C402	⚠C5D3		428B3021	C,METAL FILM 50V 0.47UF
C50C	C8A2	C8D1	428B3025	C,METAL FILM 50V 1.0UF
⚠C613			428B3101	C,METAL FILM 50V 0.010UF
⚠C5E8	C5GE		428CJ022	C,METAL FILM 250V 0.1UF
⚠C666	⚠C667		428D0053	C,METAL 100V 0.1UF

SYMBOL	PARTS NO	DESCRIPTION
C7A0 C7A1 C7A2	428D0097	C,FILM 250V 0.22UF
C907		
C409	428D4317	C,METAL FILM 100V 0.22UF
⚠C5A8 C964	428JJ115	C,METAL 1000V 0.047UF
C960	42808501	C,METAL FILM 1.6KV 1000PF
⚠C654	42809001	C,METAL FILM 100V 0.01UF
⚠C581	42817101	C,METAL 1600V 1500PF
⚠C5A6	42817103	C,METAL FILM 2.0KV 1700PF
⚠C582	42817201	C,METAL 1600V 6200PF
⚠C59A ⚠C599	42839602	C,METAL 400V 0.12UF
⚠C598	42839604	C,METAL 400V 0.18UF
⚠C596	42839610	C,METAL 400V 0.39UF 5%
⚠C595	42839613	C,METAL 400V 0.56UF
⚠C597	42839631	C,METAL FILM 400V 0.6UF
⚠C59C	42839707	C,METAL 400V 0.27UF 5%
⚠C610	42840225	C,METAL 630V 0.022UF
⚠C601	42898002	C,FILM AC250V 0.47UF
⚠C602 ⚠C619	42899098	C,FILM 250V 0.1UF
C7C6	430BJ518	C,ELEC 160V 33UF
C771 C772 C773	430B3104	C,ELEC 50V 3.3UF
C801	430B6017	C,ELEC 10V 220UF
⚠C2004 ⚠C2006 C733	430B6029	C,ELEC 16V 100UF
C734 C735 C969		
C5S6 C5S7 C508	430B6030	C,ELEC 16V 220UF
C724 C725 C726	430B6032	C,ELEC 16V 470UF
C736		
C5G9	430B6039	C,ELEC 25V 22UF
⚠C2002 C472 C5A1	430B6041	C,ELEC 25V 47UF
C5S4 C5S5 C5X2		
C57C C722 C741		
C780 C8H8		
C461	430B6054	C,ELEC 35V 100UF
C8L0	430B6060	C,ELEC 50V 0.47UF
C5M7 C517 C8H9	430B6061	C,ELEC 50V 1.0UF
C5S2	430B6063	C,ELEC 50V 3.3UF
C5H0 C5H1 C5X3	430B6064	C,ELEC 50V 4.7UF
C501 C8G8 C8H2		
C8H6		
C462 ⚠C5E0 C5H2	430B6065	C,ELEC 50V 10UF
C7E0 C7E1 C7E2		
C727 C728 C729		
C730 C731 C732		
C756 C757 C758		
C8G4 C8H5 C8K6		
C871		
⚠C2008 C5C0 C5GC	430B6066	C,ELEC 50V 22UF
C572		
⚠C5E9	430B6068	C,ELEC 50V 47UF
C571	430B6069	C,ELEC 50V 100UF
C590	430B6096	C,ELEC 100V 3.3UF
C8H3	430B6221	C,ELEC 50V 0.1UF
⚠C5F1	430B6516	C,ELEC 160V 10UF
C402	430B6536	C,ELEC 200V 10UF
C833	430B8135	C,ELEC 10V 220UF
C713 C715	430B8144	C,ELEC 16V 47UF
C803	430B8152	C,ELEC 25V 10UF

SYMBOL	PARTS NO	DESCRIPTION
C5GA	430B8180	C,ELEC 50V 22UF
C863	430B9016	C,ELEC 10V 100UF
C503 C8C9 C831	430B9017	C,ELEC 10V 220UF
C861 C967 C968	430B9025	C,ELEC 16V 10UF
C765 C766 C767	430B9026	C,ELEC 16V 22UF
C952 C953 C961	430B9028	C,ELEC 16V 47UF
C8C3	430B9031	C,ELEC 16V 330UF
C750 C751 C752	430B9032	C,ELEC 16V 470UF
⚠C5E7	430B9039	C,ELEC 25V 22UF
C5A4 C862	430B9041	C,ELEC 25V 47UF
⚠C665	430B9053	C,ELEC 35V 47UF
C411	430B9054	C,ELEC 35V 100UF
⚠C660	430B9057	C,ELEC 35V 470UF
C408	430B9061	C,ELEC 50V 1.0UF
⚠C5E3 ⚠C612 ⚠C615	430B9065	C,ELEC 50V 10UF
C2101 ⚠C5E4 C5G4	430B9066	C,ELEC 50V 22UF
C5M1		
C407	430B9070	C,ELEC 50V 220UF
C405	430B9071	C,ELEC 50V 330UF
C7A3 C7A4 C7A5	430B9512	C,ELEC 160V 1.0UF
C793 C794 C795	430B9513	C,ELEC 160V 2.2UF
C5G7 ⚠C59L C7D7	430B9552	C,ELEC 250V 1 UF
C832	430C0253	C,ELEC 25V 22UF
C8C1 C8C2	430C2105	C,ELEC 25V 470UF
C774 C775 C776	430C8423	C,ELEC 16V 470UF
C491	430C9154	C,ELEC 350V 3.3UF
C8C5	430J8109	C,ELEC 16V 47UF
⚠C659 ⚠C663	4302J059	C,ELEC 35V 2200UF
⚠C652	4302J105	C,ELEC 100V 470UF
⚠C653	4302J559	C,ELEC 250V 47UF
C410	4303D185	C,ELEC 50V 1500UF
C5A9 C5M6 C5M9	4303J222	C,ELEC 250V 2.2UF
C5H6	4303J224	C,ELEC 250V 4.7UF
C8A3 C8A4	43032175	C,ELEC 50V 220UF
⚠C656 ⚠C657 ⚠C669	4304A013	C,ELEC 160V 100UF
C5H9	4309H105	C,ELEC 200V 4.7UF
⚠C5E5	4309H106	C,ELEC 250V 22UF
⚠C605	43109493	C,ELEC 400V 470UF
C583	43198002	C,ELEC 200V 47UF
C8C4	432K6011	C,ELEC 10V 220UF
C8F0	432K6208	C,ELEC 63V 33UF
C5S3	433A3033	C,ELEC 25V 10UF
C8H4	433A3058	C,ELEC 50V 4.7UF
⚠C5MC	433A4025	C,ELEC 16V 47UF
C8G1 C8G3 C8H1	433A4056	C,ELEC 50V 22UF
C7C0 C7C1 C7C2	433A6045	C,ELEC 16V 22UF
C7C3 C7C4 C7C5		
C701 C702 C703		
C704 C705 C706		
⚠C5EC	433A7013	C,ELEC 16V 47UF
C514	435A8307	C,TANTALUM 35V 1.0UF

REPLACEMENT PARTS LIST

The components specified for Model JC-2141UMR.

Notes: The components identified by ⚠ mark are critical for safety.
Replace only with parts Number specified.

SYMBOL	PARTS NO	DESCRIPTION
*** CRT & TUNER ***		
⚠CRT	33021503	CRT AF21F9SLB22-E-TC42R
*** ICS ***		
⚠IC5E1	370A1009	IC UPC1093J-T (REG)
IC811	370E6005	IC PST518A
IC503 IC8G0 IC8G2	37011018	IC UPC311C (COMP)
IC402 IC5G1	37011024	IC UPC3403C (OP-AMP)
⚠IC2001 ⚠IC2002	37011132	IC UPC4082C (OP-AMP)
IC471 IC5S2 IC506 IC509 IC809 IC810 IC863 IC951	37011206	IC XRA10358 (OP-AMP)
IC5S3 IC5S4 IC504 IC806 IC807 IC808 IC862 IC864	37011210	IC XRA10324 (Q OP-AMP)
⚠IC5E2 IC5G0 IC8A2 IC8G1	37011262	IC XRA10393 (COMP)
IC431 IC505	37051036	MOS UPD4066BC
IC803	37051042	MOS UPD4028BC (BCD DECI)
IC8G5	37051096	IC SN74LS367AN (BUFF)
IC502 IC8G4	37051179	IC SN74LS123N (MONO MLT)
IC805	37053036	MOS SN74HC32N (OR)
IC5A1	37053390	MOS HD74HC123AP
IC804	37055401	MOS XRM93C56B-E
⚠IC501	37056295	IC LA7851
IC702 IC703 IC704	37056433	IC M51399P
IC5S1 IC952	37056618	IC BA6110
⚠IC601	37056810	IC M67297 (SW.REG CONT)
IC860 IC861	37056812	IC M62362P
IC802	37056813	IC M62359P
IC701	37056814	IC M52035P
IC8G3	37056867	IC M52036SP
IC5S5	37056877	IC NJM4200D (MULTIPLIER)
IC571 IC8A1	37056885	IC NJM3404AD
IC401	37056887	IC TDA1675A
IC705 IC706 IC707	37056905	IC VPA12H
IC801	37056915	IC UPD78C12AGQ-A66-36
IC510 IC511	37101543	IC XRA10339
*** TRANSISTORS ***		
⚠Q5M4	350A1500	TR 2SA1767-TA
⚠Q2002 Q421 Q462 Q5G2 Q5G4 Q5M1 Q5R3 Q572 ⚠Q652 ⚠Q653 Q714 Q715 Q716 Q8A2 Q8A4 Q8A6 Q8A8 Q807 Q861 Q862 Q952 Q957	350E3218	TR 2SC1740S-T R
Q701 Q702 Q703 Q704 Q705 Q706 Q710 Q726 Q727 Q728 Q731 Q733	350H1811	TR,2SC2901 K-T

SYMBOL	PARTS NO	DESCRIPTION
Q740 Q741 Q742	350H4417	TR,2SC1473-TA Q
Q7C0	350H5017	TR,2SC3811-TA Q
Q5A1 Q5R2 Q502 Q806	350H5018	TR,2SC3811-TA R
Q954	350K4311	TR 2SA953-T K
⚠Q5E2	350K4411	TR 2SA952 K,AT
Q5A3	350K4412	TR 2SA952 L,AT
⚠Q2001 Q5G5 Q5M2 Q5R4 Q501 Q56E Q573	350K4518	TR 2SA933-T R
Q743 Q744 Q745	350K5217	TR,2SA1018-TA Q
Q5G1 Q5G3 Q5M0 Q5S1 Q711 Q712 Q713 Q8A3 Q8A7 Q863 Q864 Q951	350K5718	TR 2SA933S-T R
Q732	350K7500	TR 2SA1206-T
Q956	35011600	TR 2SA1831
Q451	35025211	TR 2SB546 K
Q571	35025212	TR 2SB546 L
Q5A2 ⚠Q5E1	35050918	TR 2SC1384 R
⚠Q651	35053012	TR 2SC1941 L
Q481	35056311	TR 2SC2688 K
Q482	35058905	TR,2SC1841 E
Q452	35063411	TR,2SD401A K
Q461 Q471 Q8A1 Q8C0	35065416	TR,2SD882 P
Q723 Q724 Q725	35080200	TR 2SC2407/2407A
Q958	35084600	TR,2SC3675
Q953 Q955	35094200	TR 2SC4572
⚠Q581	35094300	TR 2SC3998
Q422 Q423 Q424 Q425	351A0690	TR DTC115ES-TP
⚠Q5E4	351G0553	TR DTA143ES-T
Q56A Q56C Q59A Q59E	351G0560	TR DTA144WS-T
Q708 Q8G0 Q8G1	351G0600	TR DTA114ES-T
⚠Q2005 ⚠Q2006 Q5G0 Q5R0 Q707 Q709 Q719 Q734 Q8A5 Q8G2 Q8G4 Q802 Q803 Q804 Q805	351G0601	TR DTC114ES-T
⚠Q5E0 Q50A Q51A Q52A Q53A Q54A Q55A Q58A Q59C Q59F Q717 Q718 Q8G3	351G0602	TR DTC144ES-T
Q801	351G0641	TR DTC114YS-T
⚠Q654	351G0653	TR DTC123ES-T
Q2101 Q5R1	351G0655	TR DTC143ES-TP
Q5G6 Q5M3 Q574	35122500	TR 2SK758
Q8A9	35122600	TR 2SK701
⚠Q5A4 ⚠Q5A5	35122800	TR 2SK1271
Q591 Q592 Q593	35125700	TR 2SK947

SYMBOL	PARTS NO	DESCRIPTION
Q594 Q595 Q596	35125700	TR 2SK947
⚠Q601	35125800	TR,2SK1342
⚠Q5E3	35126900	TR 2SK806
Q860	35560416	TR 2SD794A P
⚠CR601	35595015	TRIAC AC10FGM

*** DIODES ***

SYMBOL	PARTS NO	DESCRIPTION
⚠D605	360K1010	DIODE,SI.1S2472
D101 D102 D103	360K1027	DI 1SS132 AT52
D104 D105 D106		
D107 D108 D109		
D110 D111 D112		
D113 D114 D115		
D116 ⚠D2003 ⚠D2006		
⚠D2008 ⚠D2101 D2102		
D2103 D401 D5A0		
D5A1 D5A3 ⚠D5E1		
D5G0 D5G1 D5G2		
D5G4 D5G5 D5G6		
D5M0 D5M2 D5M3		
D5M4 D5R1 D501		
D502 D591 D592		
⚠D654 ⚠D655 D7G0		
D701 D702 D703		
D704 D705 D706		
D707 D708 D709		
D710 D711 D712		
D713 D714 D715		
D716 D717 D718		
D719 D720 D721		
D722 D723 D725		
D726 D727 D728		
D729 D730 D8A1		
D8A2 D8A3 D8A4		
D8A5 D8A6 D8G0		
D8G1 D8G2 D8G3		
D8G4 D8G5 D8G6		
D8G7 D8G8 D8G9		
D8H2 D8H3 D8H4		
D803 D804 D805		
D806 D860 D861		
D862 D863 D864		
D901 D951 D952		
D953 D954		
D482 D491 D755	360K1032	DIODE 1SS82-TA
D756 D757 D758		
D759 D760 D761		
D762 D763 D902		
ZD801	360K3087	DIODE RD3.0EB-T4
ZD860	360K3114	DIODE 8.2EB(1)
ZD452	360K3118	DIODE,RD10EB(1)-T4
⚠ZD653	360K3123	DIODE RD20EB(3)
⚠ZD652	360K3124	DIODE RD8.2EB (3)-T4
ZD471 ZD5A1 ⚠ZD5E1	360K3134	DIODE RD15EB(2)-T4
ZD571		
ZD5R1	360K3145	DIODE RD27EB-T4
ZD5R0	360K3151	DIODE RD5.1EB(3)-T4
ZD503	360K3160	DIODE RD8.2EB(2)-T4
ZD5R2	360K3161	DIODE RD12EB(2)-T4
ZD8A3	360K3169	DIODE RD6.2EB(2)-T4

SYMBOL	PARTS NO	DESCRIPTION
ZD461 ZD561 ZD591	360K3170	DIODE RD6.2JSB(2)/JSAB(2)
ZD592		
ZD502	360K3188	DIODE RD3.9EB(2)-T4
ZD711 ZD712 ZD713	360K3300	DIODE RD2.0EB(1)-T4
ZD5A2	360K3326	DIODE RD18EB(3)-T4
ZD501	360K3403	DIODE RD5.1JSB(1)-T4
⚠ZD2001 ⚠ZD2002	360K3416	DIODE RD5.1JSB(2)-T4
ZD951	360K3605	DIODE RD2.2ESB(1)-T4
ZD401	360K3617	DIODE RD3.3ESB(1)-T4
ZD5G2	360K3624	DIODE RD3.9ESB(2)-T4
ZD8A4	360K3634	DIODE RD5.1ESB(1)-T4
⚠ZD5E0	360K3635	DIODE RD5.1ESB(2)-T4
ZD803	360K3637	DIODE RD5.6ESB-T4
⚠ZD2101	360K3647	DIODE RD6.8ESB(2)-T4
ZD5G0 ZD710 ZD8A1	360K3654	DIODE RD8.2ESB(1)-T4
⚠ZD5D1	360K3655	DIODE RD8.2ESB(2)/ESAB(2)
ZD5G3	360K3656	DIODE RD8.2ESB(3)-T4
ZD5G1	360K3658	DIODE RD9.1ESB(1)-T4
⚠ZD5E4	360K3675	DIODE RD13ESB(2)-T4
⚠ZD5E2	360K3680	DIODE RD15ESB(3)-T4
ZD8A2	360K3683	DIODE RD16ESB(2)-T4
⚠ZD651	360K3721	DIODE RD36ESB(3)-T4
⚠D602	361K7303	DIODE EU02 V1
⚠D5A2	361K7312	DIODE EP01C-V
⚠D604	361K7322	DIODE EL1Z-T
⚠D5E2 ⚠D5E4 ⚠D572	361K7562	DIODE EGP10G G23
D590 D8A9 D8C0		
D5M5	361K7637	DIODE EGP20G G23
MD801 MD802	361K8233	DIODE DAN209S-TP
⚠D603	36107174	DIODE RU1P
⚠D656	36107178	DIODE RU3
D573 D574 D8A7	36107293	DIODE RK14
⚠D651 ⚠D652	36107320	DIODE FMG-G26S
⚠D5D1 ⚠D5E3	36107541	DIODE EG01A
⚠D583 ⚠D584	36107560	DIODE RG2A2
D5G7	36107638	DIODE EGP30G
⚠D653	36108072	D,NETWORK D5LCA20
⚠D601	36108201	DIODE,NETWORK D5SBA60S
⚠D582	36108238	DIODE FMP-G3FS
ZD802	367K0017	DIODE RD4.7EB-T4
ZD861	367K0048	DIODE RD5.1FB(2)
D120	36801340	LED SLR-34MC3F
D121 D122	36801343	LED SLA-570MT3F(XJ,XK,XL)
D402 D481 D5G3	369K2136	DIODE RGP10G,AT
D5G8 D731 D732		
D8C3 D8C4		
ZD451	369K5512	DIODE,ZENER RD18JSB2
⚠TH601	38112058	THERMISTOR,POSITIVE
⚠PC601 ⚠PC602	38200233	IC TLP634(NHE-LF2)

*** TRANSFORMERS ***

SYMBOL	PARTS NO	DESCRIPTION
T571	45804008	TRANS,H.DRIVE
L5M1	46206005	TRANS,CHOKE 4MH
L5G1	46206006	TRANS,CHOKE 2MH
T5G0 T5M0	46302105	TRANS,FERRITE

SYMBOL	PARTS NO	DESCRIPTION
T8A1	46304111	TRANS,CONVERTER
⚠T601	46311405	TRANS,SWITCHING W345
⚠T5A1	47105678	F.B.T.(SR)
⚠T581	47710017	TRANS,H.OUTPUT

*** VARIABLE RESISTORS ***

SYMBOL	PARTS NO	DESCRIPTION
VR8A1	410G1207	R,VARIABLE B1.0K
VR701 VR702 VR703	410G1210	R,VARIABLE B3.3K
VR861	410G1211	R,VARIABLE B4.7K
VR860	410G1213	R,VARIABLE B10K
VR801 VR802	410G1415	R,VARIABLE B22K-T
VR101 VR102	41011106	R,VARIABLE B10K-V
VR411	41085005	R,VARIABLE B1K
VR401 VR421 VR590 VR951	41085009	R,VARIABLE B10K
VR441 VR56A	41085012	R,VARIABLE B50K
VR431 VR56C VR56E VR901 VR952	41085014	R,VARIABLE B200K
VR461	41085056	R,VARIABLE B2K
VR5U1 VR5W1	41085059	R,VARIABLE B10K
VR5S2	41085066	R,VARIABLE B500K
VR720 VR721 VR722 VR723 VR724 VR725	415K5159	R,VARIABLE B20K
⚠VR5D1	41505005	R,VARIABLE B2K
⚠VR2001 ⚠VR5E1	41505007	R,VARIABLE B5K
⚠VR651	41505103	R,VARIABLE B500

*** RELAYS & SWITCHES ***

SYMBOL	PARTS NO	DESCRIPTION
SW111 SW401	65161048	SWITCH,SLIDE
SW112	65161059	SWITCH,SLIDE 1-6L-3NS
SW701	65161062	SWITCH,SLIDE 2-6L-2NS
SW101 SW102 SW103 SW104 SW105 SW106 SW107 SW108 SW109 SW110	653F0031	SWITCH,PUSH BUTTON
	65360029	SWITCH,PUSH BUTTON
RL590 RL591	65660004	RELAY G6C-1114P-US
⚠RL601	65660019	RELAY G5P-1(24V)

*** COILS & FILTERS ***

SYMBOL	PARTS NO	DESCRIPTION
MR802	390C0151	R,NETWORK 8*10K 5% 1/8W
MR801	390C9804	R,NETWORK
MR803 MR804 MR805 MR806 MR807	390C9805	R,NETWORK 4*1.0K 5% 1/6W
MC801 MC802 MC803 MC804	39013042	C,CERAMIC 25V 0.01UF
⚠L591 ⚠L592	60919121	COIL,H.LIN. N-59 (16T)
⚠L590	60919122	COIL,H.LIN. N-60 (10T)
L5S1	610E1717	COIL,FILTER 10UH
L710 L711 L712	610E1726	COIL,FILTER 56UH
L602	610F5002	FERRITE BEADS (B-02-RT)
L720 L721 L722	610F6014	COIL,FILTER 5.6UH
L901 L902 L903	610F7619	COIL,FILTER 0.15UH
[illegible]	61055001	COIL,FILTER 8500UH
	61062076	POWER LINE FILTER

SYMBOL	PARTS NO	DESCRIPTION
⚠FL601 FL602	61062102	COIL,LINE FILTER 8.2MH
⚠L5E1 L5G0 L5G2 ⚠L5M0 L8A1 L8A2	61064006	COIL,FILTER 50UH
⚠L594	61070135	FILTER CHOKE 4MH
⚠L601	61072349	COIL,FILTER
L704	61099011	COIL,CHOKE 33UH
⚠L653	61099013	COIL,CHOKE 10UH
⚠L652	61099014	COIL,CHOKE 33UH
⚠L593	61099019	COIL,CHOKE 10MH
⚠L651	61099036	FILTER CHOKE
L8A3	61099047	FILTER CHOKE
DEG	61321205	COIL,DEGAUSSING
LC901	616K6028	NOISE FILTER 1H223X-TA
LC701 LC702 LC703 LC704	616K6801	NOISE FILTER 2R2-101-T
LC711 LC712 LC713 LC714 LC715 LC902	616K6946	NOISE FILTER TH28123MA
LC708 LC709 LC710	616K6964	NOISE FILTER TX07250NBT
LC705 LC706 LC707	616K6965	NOISE FILTER TX09500NBT

*** PWB ASSYS ***

SYMBOL	PARTS NO	DESCRIPTION
	84N68A01	SW.REG PWB ASSY
	84N68C01	VIDEO PWB ASSY
	84N68D01	DEF PWB ASSY
	84N68J01	CRT PWB ASSY
	84N68M03	CPU PWB ASSY
	84N68S02	SDP PWB ASSY
	84N68T02	TR PWB ASSY

*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***

SYMBOL	PARTS NO	DESCRIPTION
HS2	31709105	SHEET,HEAT SINK
HS1	31709204	SHEET,HEAT SINK
HS582	31709503	SHEET,INSULATOR
HS581	31709507	SHEET,INSULATOR HEAT SINK
HS3	31709612	SHEET INSULATOR M-45
HS5A4	31709614	SHEET,INSULATOR M-45
SG901 SG902 SG903 SG904	329J0047	ARRESTER (300V),AT52
X801	64098031	X'TAL 12000KHZ
⚠F601 ⚠F651	66671027	FUSE 250V 4A
SG951	667K7001	SPARK GAP 1.2KV
SG905	66706002	SPARK GAP 1.5KV
	70032054	SG/CRT SOCKET(DBF)
	70051321	RECEPTACLE 1P
CN-D2	70056398	MINI D-SUB COCKET 15PV
CN-D1	70056399	D-SUB SOCKET 15PV
	71205037	HOLDER,FUSE
	73893105	CABLE,SIGNAL D15P-MD15P
	74004891	CAP
	75513033	LINE CORD

*** APPEARANCE PARTS ***

SYMBOL	PARTS NO	DESCRIPTION
	25282981	SCREW REVET
	25283511	JOINT
	25314021	CABINET BACK(A) ASSY

SYMBOL	PARTS NO	DESCRIPTION
	25314041	CABINET BACK(B) ASSY
	25314062	CABINET BOTTOM
	25314151	CABINET FRONT ASSY
	25419341	HOOK (B)
	25419402	REVOLVING SPINDLE
	25419491	ESCUTCHEON
	25419501	REVOLVING STAND ASSY
	25421111	LID CONTROL ASSY
	25534631	COIL SPRING
	25607291	SLIDE SHEET
	25612281	FOOT RUBBER (D21)
	25757643	LABEL(REV.)
	25775701	LABEL (CONTROL)
	25776401	**NAME PLATE, INSTRUCTION**

*** KNOBS & PUSH BUTTONS ***

SYMBOL	PARTS NO	DESCRIPTION
	25454691	KNOB,SLIDE
	25454741	PUSH BUTTON (SW)
	25454752	KNOB,CONTROL

*** PRINTED & PACKING MATERIALS ***

SYMBOL	PARTS NO	DESCRIPTION
	24813191	BAG,POLYETHYLENE(150*370)
	24814531	BAG,POLYEHYLENE (180*350)
	25815061	BAG,POLYETHYLENE (270X370
	25822831	SHEET PROTECTION
	25823512	CARTON BOX(B)
	25823522	FILLER T,CARTON
	25823532	FILLER B,CARTON
	25826342	**CARTON BOX (T)(JC-2141UMR)**
	25826571	CORNER ANGLE
	78034407	**MONITOR SALES OFFICE LIST**
	78043392	WARRANTY CARD
	78126012	USER'S MANUAL (5FG/6FG)B
	78652212	TEMPLATE B

*** RESISTORS ***

SYMBOL	PARTS NO	DESCRIPTION
R406	401C6609	R,CARBON 2.2H 5% 1/4W
R583 R584	401C6651	R,CARBON 120H 5% 1/4W
⚠R668	401C6657	R,CARBON 220H 5% 1/4W
⚠R667 R834	401C6665	R,CARBON 470H 5% 1/4W
R124	401C6667	R,CARBON 560H 5% 1/4W
R5R6	401C6669	R,CARBON 680H 5% 1/4W
R578	401C6677	R,CARBON 1.5K 5% 1/4W
R911	401C6689	R,CARBON 4.7K 5% 1/4W
⚠R5E8	401C6691	R,CARBON 5.6K 5% 1/4W
⚠R5AA ⚠R5AC	401C6745	R,CARBON 1.0M 5% 1/4W
R8C4	401C6761	R,CARBON 4.7M 5% 1/4W
⚠R5GA	401G6127	R,CARBON 12H 5% 1/4W
⚠R491	401G6173	R,CARBON 1.0K 5% 1/4W
⚠R5N4	401G6185	R,CARBON 3.3K 5% 1/4W
⚠R904	401G6191	R,CARBON 5.6K 5% 1/4W
⚠R5A9	401G8137	R,CARBON 33H 5% 1/2W
R904 R905 R906	*401H5645*	*R,CARBON 68H 5% 1/2W*
R790 R791 R792	401H5657	R,CARBON 220H 5% 1/2W

SYMBOL	PARTS NO	DESCRIPTION
R725 R726 R727	401H5661	R,CARBON 330H 5% 1/2W
⚠R619	401H5667	R,CARBON 560H 5% 1/2W
R985	401H5677	R,CARBON 1.5K 5% 1/2W
R8A4	401H5681	R,CARBON 2.2K 5% 1/2W
R8A1	401H5683	R,CARBON 2.7K 5% 1/2W
⚠R655	401H5705	R,CARBON 22K 5% 1/2W
R974 R975	401H5731	R,CARBON 270K 5% 1/2W
⚠R601	401H5737	R,CARBON 470K 5% 1/2W
⚠R5N5	401H5741	R,CARBON 680K 5% 1/2W
⚠R603	401H5745	R,CARBON 1.0M 5% 1/2W
⚠R5E7 R524 R7F4 R7F5 R8F9 R865	401J9820	RD16Z,0H,AT52
R50F R51C R54F R56X	401K5601	R,CARBON 1H 5% 1/6W
R5K6 R909	401K5633	R,CARBON 22H 5% 1/6W
R7C0 R7C1 R7C2	401K5639	R,CARBON 39H 5% 1/6W
R5N2	401K5641	R,CARBON 47H 5% 1/6W
R8D0	401K5643	R,CARBON 56H 5% 1/6W
R970	401K5647	R,CARBON 82H 5% 1/6W
⚠R2011 R408 R57E R59A R59C R59E R59F R59G R59W ⚠R662 R7A0 R7A1 R7A2 R7G1 R750 R751 R752 R910 R966	401K5649	R,CARBON 100H 5% 1/6W
R719 R720 R721 R722 R723 R724 R760 R761 R762 R784 R785 R786	401K5653	R,CARBON 150H 5% 1/6W
R110 R8E7	401K5655	R,CARBON 180H 5% 1/6W
R56S ⚠R615 R8F4	401K5657	R,CARBON 220H 5% 1/6W
R2102 R513 R802	401K5659	R,CARBON 270H 5% 1/6W
R56M R58C R7G0	401K5661	R,CARBON 330H 5% 1/6W
R7A3 R7A5 R7A7	401K5663	R,CARBON 390H 5% 1/6W
R781 R782 R783 R8C6	401K5665	R,CARBON 470H 5% 1/6W
R596 R598 R8L3	401K5667	R,CARBON 560H 5% 1/6W
R121 ⚠R672 R756 R757 R758 R8E6 R8H0	401K5669	R,CARBON 680H 5% 1/6W
R775 R777 R779	401K5671	R,CARBON 820H 5% 1/6W
R111 R409 R454 R455 R5A8 ⚠R5EA ⚠R5E4 ⚠R5E5 R5W4 R5W5 R516 R53L R535 ⚠R605 ⚠R674 R738 R787 R788 R789 R8K8 R8K9 R810 R811 R832 R857 R858 R859 R86A R86C R871 R873 R877 R878 R879 R880 R882 R956 R957	401K5673	R,CARBON 1.0K 5% 1/6W
R511 ⚠R659 R8H6 R8H8	401K5675	R,CARBON 1.2K 5% 1/6W
R474 R5A7 ⚠R5D3 R528 ⚠R657 ⚠R658	401K5677	R,CARBON 1.5K 5% 1/6W

SYMBOL			PARTS NO	DESCRIPTION
R8G9	R8H2		401K5677	R,CARBON 1.5K 5% 1/6W
R5R5	R793	R971	401K5679	R,CARBON 1.8K 5% 1/6W
R407	R466	R57K	401K5681	R,CARBON 2.2K 5% 1/6W
R7G2	R7G3	R731		
R732	R735	R736		
R737	R739	R8C1		
R8C2	R816	R983		
R5A0	R5A4	R5A5	401K5683	R,CARBON 2.7K 5% 1/6W
⚠R5E0	R5U7	R8H7		
R801	R870	R876		
⚠R201G	R411	R5X6	401K5685	R,CARBON 3.3K 5% 1/6W
R52F	R59L	R59S		
R59T	R590	R595		
R597	R707	R709		
R711	R713	R715		
R717	R776	R778		
R780	R8G4	R8G5		
R8G6	R8G7	R8G8		
R8H1	R8H5	R8H9		
R8L0	R8L1	R863		
R872	R965			
R463	R5K5	R5N0	401K5687	R,CARBON 3.9K 5% 1/6W
R50K	R51K	R52K		
R53K	R54K	R55K		
R58K	R7A4	R7A6		
R7A8	R7G4	R8E0		
⚠R201M	R401	R462	401K5689	R,CARBON 4.7K 5% 1/6W
R5H1	R5R4	R533		
⚠R663	R763	R8K4		
R8K5	R866			
⚠R2006	R465	⚠R5D2	401K5691	R,CARBON 5.6K 5% 1/6W
⚠R5E1	⚠R5E9	R5Y4		
R520	R7C4	R7C6		
R7C8	R8E1	R8G0		
R8G2	R8K0	R8K1		
R8K2				
R120	⚠R201H	R5G1	401K5693	R,CARBON 6.8K 5% 1/6W
R5G5	R5K7	R5M0		
R5N1	R5T6	R514		
R745	R803	R818		
R5H4	R7E2	R7E3	401K5695	R,CARBON 8.2K 5% 1/6W
R7E4	R8A9	R862		
R864	R869			
⚠R2007	⚠R201K	⚠R2010	401K5697	R,CARBON 10K 5% 1/6W
⚠R2020	R464	R475		
R5G2	R5M8	R5S3		
R5S4	R5T1	R5T2		
R5T4	R5U0	R5U2		
R5U3	R5X1	R5X4		
R5Y3	R50M	R504		
R505	R515	R526		
R527	R529	R53S		
R544	R569	⚠R652		
R7E5	R7E6	R7E7		
R7F3	R708	R710		
R712	R714	R716		
R718	R742	R744		
R764	R765	R766		
R767	R768	R769		
R772	R773	R774		
R8A2	R8A3	R8C0		
[illegible]	[illegible]	[illegible]		

SYMBOL			PARTS NO	DESCRIPTION
R807	R808	R809	401K5697	R,CARBON 10K 5% 1/6W
R850	R851	R852		
R867	R868	R874		
R884	R907	R913		
R951	R952	R979		
R982	R984	R987		
⚠R2013	R402	R420	401K5699	R,CARBON 12K 5% 1/6W
⚠R5E2	R5G4	R5R0		
R5R7	R512	R523		
R59N	R741	R743		
R886	R964			
R2104	R421	R5H0	401K5701	R,CARBON 15K 5% 1/6W
⚠R614	⚠R670	R8A5		
R8A6	R8K3	R817		
R5X7			401K5703	R,CARBON 18K 5% 1/6W
⚠R201L	R404	R5H5	401K5705	R,CARBON 22K 5% 1/6W
R5M2	R5T7	R5U9		
R5W9	R522	⚠R613		
⚠R660	R7F0	R7F1		
R7F2	R730	R734		
R8A8	R8C3	R8K6		
R976	R978			
R424	R451	R5T3	401K5707	R,CARBON 27K 5% 1/6W
R5U6	R5Y6	R50T		
R52T	R53T	R54T		
R55T	R58T	R981		
R989				
⚠R2012	R2101	R423	401K5709	R,CARBON 33K 5% 1/6W
R5C4	⚠R5D5	R5H8		
R5M6	R503	R509		
R531	R532	R534		
R568	R7D9	R7E0		
R7E1	R853	R854		
R855	R856	R885		
R955	R962			
⚠R200A	⚠R200C	⚠R201E	401K5711	R,CARBON 39K 5% 1/6W
R422	R443	R482		
R837				
R5A3	R5H2	R5H3	401K5713	R,CARBON 47K 5% 1/6W
R5S8	R5T0	⚠R669		
R7C3	R7C5	R7C7		
R806	R914	R954		
R980				
⚠R200F	R436	R437	401K5715	R,CARBON 56K 5% 1/6W
R483	R5M7	R56G		
R56H	R8F2	R958		
R960				
R450	R5S7	R5S9	401K5717	R,CARBON 68K 5% 1/6W
R5Y5	R502	⚠R671		
R5H7	R5T8	R56T	401K5719	R,CARBON 82K 5% 1/6W
R59M	R7D6	R7D7		
R7D8	R835			
⚠R2008	⚠R201F	R431	401K5721	R,CARBON 100K 5% 1/6W
R433	R434	R435		
R452	R453	R5G7		
R5U1	R5U8	R5W2		
R5W3	R5X5	R56C		
R58H	⚠R620	R8H3		
R961	R986			
R484	R5K3	R5M3	401K5723	R,CARBON 120K 5% 1/6W
R56A	R56F	R953		
⚠R2009	R5S6	R56E	401K5725	R,CARBON 150K 5% 1/6W

SYMBOL	PARTS NO	DESCRIPTION
R7D3 R7D4 R7D5	401K5725	R,CARBON 150K 5% 1/6W
R50H R50L R8A7	401K5727	R,CARBON 180K 5% 1/6W
R5G8 R5W0 R7D0	401K5729	R,CARBON 220K 5% 1/6W
R7D1 R7D2 R8G1		
R8G3 R8K7 R988		
R438 R56W R836	401K5731	R,CARBON 270K 5% 1/6W
R5N7 R7F6 R7F7	401K5733	R,CARBON 330K 5% 1/6W
R7F8		
R51H	401K5735	R,CARBON 390K 5% 1/6W
R5G3 R52H R912	401K5737	R,CARBON 470K 5% 1/6W
R959		
R53H R8C5	401K5743	R,CARBON 820K 5% 1/6W
R5G9 R5M5 R54H	401K5745	R,CARBON 1.0M 5% 1/6W
R8C8		
R55H	401K5747	R,CARBON 1.2M 5% 1/6W
R492 R908	401K5749	R,CARBON 1.5M 5% 1/6W
⚠R201D ⚠R210C	401K5753	R,CARBON 2.2M 5% 1/6W
R501	401K5757	R,CARBON 3.3M 5% 1/6W
R5G6	40175101	R,CARBON 1H 5% 1/4W
⚠R5C1 ⚠R5C2 ⚠R612	40175125	R,CARBON 10H 5% 1/4W
⚠R5M1	40175127	R,CARBON 12H 5% 1/4W
⚠R611	40175145	R,CARBON 68H 5% 1/4W
R581 R582	40298004	R,WIRE 1.0H 1% 5W
⚠R602	40298005	R,WIRE 15H 5% 7W
R8F6	403F1121	R,METAL OXIED 6.8H 5% 1W
R8F7	403F1131	R,METAL OXIED 18H 5% 1W
⚠R57T	403F1137	R,METAL 33H 5% 1W
R405	403F1165	R,METAL 470H 5% 1W
R5A6 ⚠R5E3	403F1173	R,METAL OXIED 1.0K 5% 1W
R5A1	403F1177	R,METAL OXIDE 1.5K 5% 1W
R410	403F2101	R,METAL 1.0H 5% 2W
R8F0	403F2103	R,METAL OXIDE 1.2H 5% 2W
R8F3	403F2109	R,METAL 2.2H 5% 2W
R8F5	403F2113	R,METAL OXIDE 3.3H 5% 2W
R883	403F2149	R,METAL OXIDE 100H 5% 2W
R7G5 R8E4 R8E5	403F2151	R,METAL OXIDE 120H 5% 2W
R476 R477	403F2169	R,METAL OXIDE 680H 5% 2W
R519	403F2171	R,METAL 820H 5% 2W
R8F1	403F3137	R,METAL OXIDE 33H 5% 3W
⚠R599	403F3141	R,METAL OXIDE 47H 5% 3W
R456 R457	403F3143	R,METAL OXIDE 56H 5% 3W
R861	403F3159	R,METAL OXIDE 270H 5% 3W
R521	403F3163	R,METAL OXIDE 390H 5% 3W
⚠R5D6	403F3173	R,METAL OXIDE 1.0K 5% 3W
⚠R57V	403F3177	R,METAL OXIDE 1.5K 5% 3W
R967 R968	403F3209	R,METAL OXIDE 33K 5% 3W
⚠R5D7	40318994	R,METAL 2.2K 5% 5W
⚠R656	40372135	R,METAL 27H 5% 2W
⚠R604	40372151	R,METAL 120H 5% 2W
⚠R666	40372175	R,METAL 1.2K 5% 2W
⚠R665	40372197	R,METAL 10K 5% 2W
⚠R667	40372211	R,METAL 39K 5% 2W
⚠R664	40372213	R,METAL 47K 5% 2W
⚠R606	40372219	R,METAL 82K 5% 2W
⚠R608	40372329	R,METAL 0.22H 5% 2W

SYMBOL	PARTS NO	DESCRIPTION
⚠R651 ⚠R654	40373135	R,METAL 27H 5% 3W
⚠R610	40373141	R,METAL 47H 5% 3W
⚠R616 ⚠R617	40373219	R,METAL 82K 5% 3W
R8E8	40399049	R,METAL 82H 5% 3W
R701 R702 R703	404C1646	R,METAL 75H 1% 1/6W
R704 R705 R706		
R795 R796 R797	404C1653	R,METAL 150H 1% 1/6W
R50C	404C1675	R,METAL 1.2K 1% 1/6W
⚠R2018	404C1677	R,METAL 1.5K 1% 1/6W
R58F	404C1681	R,METAL 2.2K 1% 1/6W
R122 R537 ⚠R661	404C1683	R,METAL 2.7K 1% 1/6W
R5A2	404C1685	R,METAL 3.3K 1% 1/6W
R51F R58A ⚠R653	404C1689	R. METAL 4.7K 1% 1/6W
R123	404C1691	R,METAL 5.6K 1% 1/6W
R403 R8H4	404C1694	R,METAL 7.5K 1% 1/6W
R52C	404C1695	R,METAL 8.2K 1% 1/6W
⚠R2019 R5X0 R50A	404C1697	R,METAL 10K 1% 1/6W
R56R R729 R8E2		
R8E3 R840 R843		
R846 R849		
R472 R53C R58G	404C1699	R,METAL 12K 1% 1/6W
R5S5 R50G R536	404C1703	R,METAL 18K 1% 1/6W
R576 R579		
R5F4 R51G R53F	404C1705	R,METAL 22K 1% 1/6W
R538 R573 R577		
R425 R51A R54C	404C1707	R,METAL 27K 1% 1/6W
R52G R55C	404C1709	R,METAL 33K 1% 1/6W
R5U4 R5U5	404C1710	R,METAL 36K 1% 1/6W
R447 R52A R53G	404C1711	R,METAL 39K 1% 1/6W
R55F		
R471 R5S0	404C1713	R,METAL 47K 1% 1/6W
R445 R5X2 R5X3	404C1715	R,METAL 56K 1% 1/6W
R56L R572		
R426 R429 R5F3	404C1717	R,METAL 68K 1% 1/6W
R510 R57A		
R473	404C1719	R,METAL 82K 1% 1/6W
⚠R2001 R5F8 R5S1	404C1721	R,METAL 100K 1% 1/6W
R5S2 R5X9 R5Y1		
R5Y2 R50E R507		
R51E R52E R53A		
R53E R54E R54G		
R55E R56K R58E		
R838 R841 R844		
R847		
R55G R574	404C1723	R,METAL 120K 1% 1/6W
R839 R842 R845	404C1724	R,METAL 130K 1% 1/6W
R848		
R5N9 R54A	404C1725	R,METAL 150K 1% 1/6W
R428 R440 R442	404C1727	R,METAL 180K 1% 1/6W
R446 R5X8 R508		
R430 R444 R506	404C1729	R,METAL 220K 1% 1/6W
R55A R571 R575		
R427	404C1737	R,METAL 470K 1% 1/6W
R441	404C1743	R,METAL 820K 1% 1/6W
R439	404C1745	R,METAL 1.0M 1% 1/6W
⚠R5C3 ⚠R5D1 ⚠R5F9	404K5109	R,METAL 2.2H 5% 1/4W
⚠R57H ⚠R570		
⚠R461 ⚠R591	404K5117	R,METAL 4.7H 5% 1/4W

SYMBOL	PARTS NO	DESCRIPTION
⚠R481 ⚠R5F2 ⚠R860	404K5125	R,METAL 10H 5% 1/4W
⚠R5F0 ⚠R57F ⚠R57L	404K5141	R,METAL 47H 5% 1/4W
⚠R5R8	40405125	R,METAL 10H 5% 1/4W
⚠R5N3	408A8107	R,FUSE 1.8H 5% 1/2W
⚠R592 ⚠R593 ⚠R594	408A8157	R,FUSE 220H 5% 1/2W
⚠R57G	409A6149	R,FUSE 100H 5% 1/4W

*** CAPACITORS ***

SYMBOL	PARTS NO	DESCRIPTION
C903	420C9551	C,CERAMIC 500V 100PF
C481 C5G8 ⚠C591	420C9563	C,CERAMIC 500V 1000PF
⚠C592 ⚠C593 C7A6		
C7A7 C7A8 C904		
C574	420C9567	C,CERAMIC 500V 2200PF
C7E9 C796 C797	420C9569	C,CERAMIC 50V 3300PF
C798		
C901	4203J575	C,CERAMIC 500V 0.01UF
C905	42040108	C,CERAMIC 2KV 0.01UF
⚠C603 ⚠C604	42053069	C,CERAMIC 400V 3300PF
⚠C609 C617	42053071	C,CERAMIC 400V 4700PF
⚠C658	42099086	C,CERAMIC 2KV 1000PF
⚠C611 ⚠C618	42099088	C,CERAMIC 2KV 220PF
⚠C651 ⚠C655	42099095	C,CERAMIC 2KV 330PF
⚠C607 ⚠C614	42099096	C,CERAMIC 2KV 470PF
C451 C518 C521	421A0425	C,CERAMIC 50V 0.01UF
C530 C57A C810		
C811		
C5R1	421C0205	C,CERAMIC 50V 220PF
C401 C762 C763	421C0213	C,CERAMIC 50V 1000PF
C764 C777 C778		
C779 C8A9 C867		
C737 C738 C739	421C0219	C,CERAMIC 50V 3300PF
C5G1 C7D4 C7D5	421C0225	C,CERAMIC 50V 0.01UF
C7D6 C707 C708		
C709 C710 C711		
C712 C718 C719		
C720 C759 C760		
C761 C768 C769		
C770 C784 C785		
C786 C790 C791		
C792		
C86A C86C	421C3461	C,CERAMIC 16V 0.01UF
C5S1 C5S8 C5S9	421D6009	C,CERAMIC 25V 0.1UF
C5T0 C5T1 C5T2		
C5X0 C504 C59E		
C59F C59G C59H		
C59K C59M C7E5		
C7E6 C7E7 C7E8		
C7F0 C7F1 C7F2		
C714 C716 C753		
C754 C755 C8A8		
C8H7 C8K3 C8K4		
C8K7 C8K8 C8K9		
C802 C826 C827		
C829 C830 C834		
C835 C864 C865		
C868 C869 C870	421D6009	C,CERAMIC 25V 0.1UF
C958 C965		
C200P C2021 C406	421D6013	C,CERAMIC 50V 0.1UF

SYMBOL	PARTS NO	DESCRIPTION
C5EP C50A C50R	421D6013	C,CERAMIC 50V 0.1UF
C50S C507 C51C		
C51P C56A C56C		
C57P C8C7 C8C8		
C5X1	421J9036	C,CERAMIC 25V 0.1UF
C8A1	423A1028	C,CERAMIC 50V 20PF
C509 C717	423A1045	C,CERAMIC 50V 100PF
C5G3 C8G9 C8K0	423A1057	C,CERAMIC 50V 330PF
C8K1 C8K2		
⚠C616	423A1100	C,CERAMIC 50V 390PF
C5G5 C5M0 C8K5	423A1101	C,CERAMIC 50V 470PF
C962		
C959	423A1103	C,CERAMIC 50V 560PF
C7D1 C7D2 C7D3	423A2015	C,CERAMIC 50V 10PF
C804 C805		
C820	423A2025	C,CERAMIC 50V 15PF
C5G0 C506 C787	423A2033	C,CERAMIC 50V 33PF
C788 C789		
⚠C5E2	423A2037	C,CERAMIC 50V 47PF
C781 C782 C783	423A2043	C,CERAMIC 50V 82PF
C529 C549 C966	423A2045	C,CERAMIC 50V 100PF
C5M5 C502 C510	423A2103	C,CERAMIC 50V 180PF
C511	423A2105	C,CERAMIC 50V 270PF
C515	427A7005	C,FILM 100V 0.0022UF
C8A6	427F4004	C,FILM 50V 1800PF
C8A7 C8H0	427F4009	C,FILM 50V 4700PF
⚠C5EA ⚠C5E6 C500	427F4013	C,FILM 50V 0.01UF
C8A5 C951 C957		
C516	427F4014	C,FILM 50V 0.012UF
C5G6	427F4021	C,FILM 50V 0.047UF
C5M2	427F4025	C,FILM 50V 0.1UF
⚠C5D2	427F4059	C,FILM 50V 4700PF
C412	427F4067	C,FILM 50V 0.022UF
C5G2	427F4601	C,FILM 50V 1000PF
C513	427F4603	C,FILM 50V 1500PF
C8D0	427F4605	C,FILM 50V 2200PF
C520	427F4610	C,FILM 50V 5600PF
C59N	427F4613	C,FILM 50V 0.01UF
C866	427F4617	C,FILM 50V 0.022UF
C5H7 C5H8 C5M4	427F4621	C,FILM 50V 0.047UF
C5M8		
⚠C661	427F4624	C,FILM 50V 0.082UF
C512 C578	427F4651	C,FILM 50V 1000PF
C955 C956 C963	427F4675	C,FILM 50V 0.1UF
C5A2 C5A3	427J9112	C,FILM 50V 1000PF
⚠C5D1	42703455	C,FILM 630V 2200PF
⚠C577	42703575	C,FILM 200V 0.1UF
⚠C664	42799057	C,FILM 100V 3300PF
C441 C442 ⚠C606	428B3013	C,METAL FILM 50V 0.1UF
⚠C662 C8G0 C8G2		
C402 ⚠C5D3	428B3021	C,METAL FILM 50V 0.47UF
C50C C8A2 C8D1	428B3025	C,METAL FILM 50V 1.0UF
⚠C613	428B3101	C,METAL FILM 50V 0.010UF
⚠C5E8 C5GE	428CJ022	C,METAL FILM 250V 0.1UF
⚠C666 ⚠C667	428D0053	C,METAL 100V 0.1UF
C7A0 C7A1 C7A2	428D0097	C,FILM 250V 0.22UF

SYMBOL	PARTS NO	DESCRIPTION
C907	428D0097	C,FILM 250V 0.22UF
C409	428D4317	C,METAL FILM 100V 0.22UF
⚠C5A8 C964	428JJ115	C,METAL 1000V 0.047UF
C960	42808501	C,METAL FILM 1.6KV 1000PF
⚠C654	42809001	C,METAL FILM 100V 0.01UF
⚠C581	42817101	C,METAL 1600V 1500PF
⚠C5A6	42817103	C,METAL FILM 2.0KV 1700PF
⚠C582	42817201	C,METAL 1600V 6200PF
⚠C59A ⚠C599	42839602	C,METAL 400V 0.12UF
⚠C598	42839604	C,METAL 400V 0.18UF
⚠C596	42839610	C,METAL 400V 0.39UF 5%
⚠C595	42839613	C,METAL 400V 0.56UF
⚠C597	42839631	C,METAL FILM 400V 0.6UF
⚠C59C	42839707	C,METAL 400V 0.27UF 5%
⚠C610	42840225	C,METAL 630V 0.022UF
⚠C601	42898002	C,FILM AC250V 0.47UF
⚠C602 ⚠C619	42899098	C,FILM 250V 0.1UF
C7C6	430BJ518	C,ELEC 160V 33UF
C771 C772 C773	430B3104	C,ELEC 50V 3.3UF
C801	430B6017	C,ELEC 10V 220UF
⚠C2004 ⚠C2006 C733 C734 C735 C969	430B6029	C,ELEC 16V 100UF
C5S6 C5S7 C508	430B6030	C,ELEC 16V 220UF
C724 C725 C726 C736	430B6032	C,ELEC 16V 470UF
C5G9	430B6039	C,ELEC 25V 22UF
⚠C2002 C472 C5A1 C5S4 C5S5 C5X2 C57C C722 C741 C780 C8H8	430B6041	C,ELEC 25V 47UF
C461	430B6054	C,ELEC 35V 100UF
C8L0	430B6060	C,ELEC 50V 0.47UF
C5M7 C517 C8H9	430B6061	C,ELEC 50V 1.0UF
C5S2	430B6063	C,ELEC 50V 3.3UF
C5H0 C5H1 C5X3 C501 C8G8 C8H2 C8H6	430B6064	C,ELEC 50V 4.7UF
C462 ⚠C5E0 C5H2 C7E0 C7E1 C7E2 C727 C728 C729 C730 C731 C732 C756 C757 C758 C8G4 C8H5 C8K6 C871	430B6065	C,ELEC 50V 10UF
⚠C2008 C5C0 C5GC C572	430B6066	C,ELEC 50V 22UF
⚠C5E9	430B6068	C,ELEC 50V 47UF
C571	430B6069	C,ELEC 50V 100UF
C590	430B6096	C,ELEC 100V 3.3UF
C8H3	430B6221	C,ELEC 50V 0.1UF
⚠C5F1	430B6516	C,ELEC 160V 10UF
C482	430B6536	C,ELEC 200V 10UF
C833	430B8135	C,ELEC 10V 220UF
C713 C715	430B8144	C,ELEC 16V 47UF
C803	430B8152	C,ELEC 25V 10UF
C5GA	430B8180	C,ELEC 50V 22UF
C863	430B9016	C,ELEC 10V 100UF
C503 C8C9 C831	430B9017	C,ELEC 10V 220UF

SYMBOL	PARTS NO	DESCRIPTION
C861 C967 C968	430B9025	C,ELEC 16V 10UF
C765 C766 C767	430B9026	C,ELEC 16V 22UF
C952 C953 C961	430B9028	C,ELEC 16V 47UF
C8C3	430B9031	C,ELEC 16V 330UF
C750 C751 C752	430B9032	C,ELEC 16V 470UF
⚠C5E7	430B9039	C,ELEC 25V 22UF
C5A4 C862	430B9041	C,ELEC 25V 47UF
⚠C665	430B9053	C,ELEC 35V 47UF
C411	430B9054	C,ELEC 35V 100UF
⚠C660	430B9057	C,ELEC 35V 470UF
C408	430B9061	C,ELEC 50V 1.0UF
⚠C5E3 ⚠C612 ⚠C615	430B9065	C,ELEC 50V 10UF
C2101 ⚠C5E4 C5G4 C5M1	430B9066	C,ELEC 50V 22UF
C407	430B9070	C,ELEC 50V 220UF
C405	430B9071	C,ELEC 50V 330UF
C7A3 C7A4 C7A5	430B9512	C,ELEC 160V 1.0UF
C793 C794 C795	430B9513	C,ELEC 160V 2.2UF
C5G7 ⚠C59L C7D7	430B9552	C,ELEC 250V 1 UF
C832	430C0253	C,ELEC 25V 22UF
C8C1 C8C2	430C2105	C,ELEC 25V 470UF
C774 C775 C776	430C8423	C,ELEC 16V 470UF
C491	430C9154	C,ELEC 350V 3.3UF
C8C5	430J8109	C,ELEC 16V 47UF
⚠C659 ⚠C663	4302J059	C,ELEC 35V 2200UF
⚠C652	4302J105	C,ELEC 100V 470UF
⚠C653	4302J559	C,ELEC 250V 47UF
C410	4303D185	C,ELEC 50V 1500UF
C5A9 C5M6 C5M9	4303J222	C,ELEC 250V 2.2UF
C5H6	4303J224	C,ELEC 250V 4.7UF
C8A3 C8A4	43032175	C,ELEC 50V 220UF
⚠C656 ⚠C657 ⚠C669	4304A013	C,ELEC 160V 100UF
C5H9	4309H105	C,ELEC 200V 4.7UF
⚠C5E5	4309H106	C,ELEC 250V 22UF
⚠C605	43109493	C,ELEC 400V 470UF
C583	43198002	C,ELEC 200V 47UF
C8C4	432K6011	C,ELEC 10V 220UF
C8F0	432K6208	C,ELEC 63V 33UF
C5S3	433A3033	C,ELEC 25V 10UF
C8H4	433A3058	C,ELEC 50V 4.7UF
⚠C5MC	433A4025	C,ELEC 16V 47UF
C8G1 C8G3 C8H1	433A4056	C,ELEC 50V 22UF
C7C0 C7C1 C7C2 C7C3 C7C4 C7C5 C701 C702 C703 C704 C705 C706	433A6045	C,ELEC 16V 22UF
⚠C5EC	433A7013	C,ELEC 16V 47UF
C514	435A8307	C,TANTALUM 35V 1.0UF

REPLACEMENT PARTS LIST

The components specified for Model JC-2142UMA.

Notes: The components identified by ⚠ mark are critical for safety.
Replace only with parts Number specified.

*** CRT & TUNER ***

SYMBOL	PARTS NO	DESCRIPTION
⚠CRT	33021502	CRT AF21F9SLB22-E-TC42

*** ICS ***

SYMBOL	PARTS NO	DESCRIPTION
⚠IC5E1	370A1009	IC UPC1093J-T (REG)
IC811	370E6005	IC PST518A
IC503 IC8G0 IC8G2	37011018	IC UPC311C (COMP)
IC402 IC5G1	37011024	IC UPC3403C (OP-AMP)
⚠IC2001 ⚠IC2002	37011132	IC UPC4082C (OP-AMP)
IC471 IC5S2 IC506	37011206	IC XRA10358 (OP-AMP)
IC509 IC809 IC810		
IC863 IC951		
IC5S3 IC5S4 IC504	37011210	IC XRA10324 (Q OP-AMP)
IC806 IC807 IC808		
IC862 IC864		
⚠IC5E2 IC5G0 IC8A2	37011262	IC XRA10393 (COMP)
IC8G1		
IC431 IC505	37051036	MOS UPD4066BC
IC803	37051042	MOS UPD4028BC (BCD DECI)
IC8G5	37051096	IC SN74LS367AN (BUFF)
IC502 IC8G4	37051179	IC SN74LS123N (MONO MLT)
IC805	37053036	MOS SN74HC32N (OR)
IC5A1	37053390	MOS HD74HC123AP
IC804	37055401	MOS XRM93C56B-E
⚠IC501	37056295	IC LA7851
IC702 IC703 IC704	37056433	IC M51399P
IC5S1 IC952	37056618	IC BA6110
⚠IC601	37056810	IC M67297 (SW.REG CONT)
IC860 IC861	37056812	IC M62362P
IC802	37056813	IC M62359P
IC701	37056814	IC M52035P
IC8G3	37056867	IC M52036SP
IC5S5	37056877	IC NJM4200D (MULTIPLIER)
IC571 IC8A1	37056885	IC NJM3404AD
IC401	37056887	IC TDA1675A
IC705 IC706 IC707	37056905	IC VPA12H
IC801	37056915	IC UPD78C12AGQ-A66-36
IC510 IC511	37101543	IC XRA10339

*** TRANSISTORS ***

SYMBOL	PARTS NO	DESCRIPTION
⚠Q5M4	350A1500	TR 2SA1767-TA
⚠Q2002 Q421 Q462	350E3218	TR 2SC1740S-T R
Q5G2 Q5G4 Q5M1		
Q5R3 Q572 ⚠Q652		
⚠Q653 Q714 Q715		
Q716 Q8A2 Q8A4		
Q8A6 Q8A8 Q807		
Q861 Q862 Q952		
Q957		
Q701 Q702 Q703	350H1811	TR,2SC2901 K-T
Q704 Q705 Q706		
[illegible] [illegible] [illegible]		
Q728 Q731 Q733		
Q740 Q741 Q742	350H4417	TR,2SC1473-TA Q
Q7C0	350H5017	TR,2SC3811-TA Q
Q5A1 Q5R2 Q502	350H5018	TR,2SC3811-TA R
Q806		
Q954	350K4311	TR 2SA953-T K
⚠Q5E2	350K4411	TR 2SA952 K,AT
Q5A3	350K4412	TR 2SA952 L,AT
⚠Q2001 Q5G5 Q5M2	350K4518	TR 2SA933-T R
Q5R4 Q501 Q56E		
Q573		
Q743 Q744 Q745	350K5217	TR,2SA1018-TA Q
Q5G1 Q5G3 Q5M0	350K5718	TR 2SA933S-T R
Q5S1 Q711 Q712		
Q713 Q8A3 Q8A7		
Q863 Q864 Q951		
Q732	350K7500	TR 2SA1206-T
Q956	35011600	TR 2SA1831
Q451	35025211	TR 2SB546 K
Q571	35025212	TR 2SB546 L
Q5A2 ⚠Q5E1	35050918	TR 2SC1384 R
⚠Q651	35053012	TR 2SC1941 L
Q481	35056311	TR 2SC2688 K
Q482	35058905	TR,2SC1841 E
Q452	35063411	TR,2SD401A K
Q461 Q471 Q8A1	35065416	TR,2SD882 P
Q8C0		
Q723 Q724 Q725	35080200	TR 2SC2407/2407A
Q958	35084600	TR,2SC3675
Q953 Q955	35094200	TR 2SC4572
⚠Q581	35094300	TR 2SC3998
Q422 Q423 Q424	351A0690	TR DTC115ES-TP
Q425		
⚠Q5E4	351G0553	TR DTA143ES-T
Q56A Q56C Q59A	351G0560	TR DTA144WS-T
Q59E		
Q708 Q8G0 Q8G1	351G0600	TR DTA114ES-T
⚠Q2005 ⚠Q2006 Q5G0	351G0601	TR DTC114ES-T
Q5R0 Q707 Q709		
Q719 Q734 Q8A5		
Q8G2 Q8G4 Q802		
Q803 Q804 Q805		
⚠Q5E0 Q50A Q51A	351G0602	TR DTC144ES-T
Q52A Q53A Q54A		
Q55A Q58A Q59C		
Q59F Q717 Q718		
Q8G3		
Q801	351G0641	TR DTC114YS-T
⚠Q654	351G0653	TR DTC123ES-T
Q2101 Q5R1	351G0655	TR DTC143ES-TP
Q5G6 Q5M3 Q574	35122500	TR 2SK758
Q8A9	35122600	TR 2SK701
⚠Q5A4 ⚠Q5A5	35122800	TR 2SK1271
Q591 Q592 Q593	35125700	TR 2SK947

SYMBOL	PARTS NO	DESCRIPTION
Q594 Q595 Q596	35125700	TR 2SK947
⚠Q601	35125900	TR,2SK1411
⚠Q5E3	35126900	TR 2SK806
Q860	35560416	TR 2SD794A P
⚠CR601	35595014	TRIAC AC10DGM

*** DIODES ***

SYMBOL	PARTS NO	DESCRIPTION
⚠D605	360K1010	DIODE,SI.1S2472
D101 D102 D103	360K1027	DI 1SS132 AT52
D104 D105 D106		
D107 D108 D109		
D110 D111 D112		
D113 D114 D115		
D116 ⚠D2003 ⚠D2006		
⚠D2008 ⚠D2101 D2102		
D2103 D401 D5A0		
D5A1 D5A3 ⚠D5E1		
D5G0 D5G1 D5G2		
D5G4 D5G5 D5G6		
D5M0 D5M2 D5M3		
D5M4 D5R1 D501		
D502 D591 D592		
⚠D654 ⚠D655 D7G0		
D701 D702 D703		
D704 D705 D706		
D707 D708 D709		
D710 D711 D712		
D713 D714 D715		
D716 D717 D718		
D719 D720 D721		
D722 D723 D725		
D726 D727 D728		
D729 D730 D8A1		
D8A2 D8A3 D8A4		
D8A5 D8A6 D8G0		
D8G1 D8G2 D8G3		
D8G4 D8G5 D8G6		
D8G7 D8G8 D8G9		
D8H2 D8H3 D8H4		
D803 D804 D805		
D806 D860 D861		
D862 D863 D864		
D901 D951 D952		
D953 D954		
D482 D491 D755	360K1032	DIODE 1SS82-TA
D756 D757 D758		
D759 D760 D761		
D762 D763 D902		
ZD801	360K3087	DIODE RD3.0EB-T4
ZD860	360K3114	DIODE 8.2EB(1)
ZD452	360K3118	DIODE,RD10EB(1)-T4
⚠ZD653	360K3123	DIODE RD20EB(3)
⚠ZD652	360K3124	DIODE RD8.2EB (3)-T4
ZD471 ZD5A1 ⚠ZD5E1	360K3134	DIODE RD15EB(2)-T4
ZD571		
ZD5R1	360K3145	DIODE RD27EB-T4
ZD5A0	360K3157	DIODE RD5.1EB(3)-T4
ZD503	360K3160	DIODE RD8.2EB(2)-T4
ZD5R2	360K3161	DIODE RD12EB(2)-T4
ZD8A3	360K3169	DIODE RD6.2EB(2)-T4
ZD461 ZD561 ZD591	360K3170	DIODE RD6.2JSB(2)/JSAB(2)
ZD592		
ZD502	360K3188	DIODE RD3.9EB(2)-T4
ZD711 ZD712 ZD713	360K3300	DIODE RD2.0EB(1)-T4
ZD5A2	360K3326	DIODE RD18EB(3)-T4
ZD501	360K3403	DIODE RD5.1JSB(1)-T4
⚠ZD2001 ⚠ZD2002	360K3416	DIODE RD5.1JSB(2)-T4
ZD951	360K3605	DIODE RD2.2ESB(1)-T4
ZD401	360K3617	DIODE RD3.3ESB(1)-T4
ZD5G2	360K3624	DIODE RD3.9ESB(2)-T4
ZD8A4	360K3634	DIODE RD5.1ESB(1)-T4
⚠ZD5E0	360K3635	DIODE RD5.1ESB(2)-T4
ZD803	360K3637	DIODE RD5.6ESB-T4
⚠ZD2101	360K3647	DIODE RD6.8ESB(2)-T4
ZD5G0 ZD710 ZD8A1	360K3654	DIODE RD8.2ESB(1)-T4
⚠ZD5D1	360K3655	DIODE RD8.2ESB(2)/ESAB(2)
ZD5G3	360K3656	DIODE RD8.2ESB(3)-T4
ZD5G1	360K3658	DIODE RD9.1ESB(1)-T4
⚠ZD5E4	360K3675	DIODE RD13ESB(2)-T4
⚠ZD5E2	360K3680	DIODE RD15ESB(3)-T4
ZD8A2	360K3683	DIODE RD16ESB(2)-T4
⚠ZD651	360K3721	DIODE RD36ESB(3)-T4
⚠D602	361K7303	DIODE EU02 V1
⚠D5A2	361K7312	DIODE EP01C-V
⚠D604	361K7322	DIODE EL1Z-T
⚠D5E2 ⚠D5E4 ⚠D572	361K7562	DIODE EGP10G G23
D590 D8A9 D8C0		
D5M5	361K7637	DIODE EGP20G G23
MD801 MD802	361K8233	DIODE DAN209S-TP
⚠D603	36107174	DIODE RU1P
⚠D656	36107178	DIODE RU3
D573 D574 D8A7	36107293	DIODE RK14
⚠D651 ⚠D652	36107320	DIODE FMG-G26S
⚠D5D1 ⚠D5E3	36107541	DIODE EG01A
⚠D583 ⚠D584	36107560	DIODE RG2A2
D5G7	36107638	DIODE EGP30G
⚠D653	36108072	D,NETWORK D5LCA20
⚠D582	36108238	DIODE FMP-G3FS
ZD802	367K0017	DIODE RD4.7EB-T4
ZD861	367K0048	DIODE RD5.1FB(2)
D120	36801340	LED SLR-34MC3F
D121 D122	36801343	LED SLA-570MT3F(XJ,XK,XL)
⚠D601	36808230	DIODE RBV-1506
D402 D481 D5G3	369K2136	DIODE RGP10G,AT
D5G8 D731 D732		
D8C3 D8C4		
ZD451	369K5512	DIODE,ZENER RD18JSB2
⚠TH601	38102046	THERMISTOR 902P61D050MP14
⚠PC601 ⚠PC602	38200234	IC PC817C/D

*** TRANSFORMERS ***

SYMBOL	PARTS NO	DESCRIPTION
T571	45804008	TRANS,H.DRIVE
L5M1	46206005	TRANS,CHOKE 4MH
L5G1	46206006	TRANS,CHOKE 2MH
T5G0 T5M0	46302105	TRANS,FERRITE

SYMBOL	PARTS NO	DESCRIPTION
T8A1	46304111	TRANS,CONVERTER
⚠T601	46311115	TRANS,SWITCHING W328
⚠T5A1	47105678	F.B.T.(SR)
⚠T581	47710017	TRANS,H.OUTPUT

*** VARIABLE RESISTORS ***

VR8A1	410G1207	R,VARIABLE B1.0K
VR701 VR702 VR703	410G1210	R,VARIABLE B3.3K
VR861	410G1211	R,VARIABLE B4.7K
VR860	410G1213	R,VARIABLE B10K
VR801 VR802	410G1415	R,VARIABLE B22K-T
VR101 VR102	41011106	R,VARIABLE B10K-V
VR411	41085005	R,VARIABLE B1K
VR401 VR421 VR590	41085009	R,VARIABLE B10K
VR951		
VR441 VR56A	41085012	R,VARIABLE B50K
VR431 VR56C VR56E	41085014	R,VARIABLE B200K
VR901 VR952		
VR461	41085056	R,VARIABLE B2K
VR5U1 ⚠VR5W1	41085059	R,VARIABLE B10K
VR5S2	41085066	R,VARIABLE B500K
VR720 VR721 VR722	415K5159	R,VARIABLE B20K
VR723 VR724 VR725		
⚠VR5D1	41505005	R,VARIABLE B2K
⚠VR2001 ⚠VR5E1	41505007	R,VARIABLE B5K
⚠VR651	41505103	R,VARIABLE B500

*** RELAYS & SWITCHES ***

SW111 SW401	65161048	SWITCH,SLIDE
SW112	65161059	SWITCH,SLIDE 1-6L-3NS
SW701	65161062	SWITCH,SLIDE 2-6L-2NS
SW101 SW102 SW103	653F0031	SWITCH,PUSH BUTTON
SW104 SW105 SW106		
SW107 SW108 SW109		
SW110		
	65360029	SWITCH,PUSH BUTTON
RL590 RL591	65660004	RELAY G6C-1114P-US
⚠RL601	65660019	RELAY G5P-1(24V)

*** COILS & FILTERS ***

MR802	390C0151	R,NETWORK 8*10K 5% 1/8W
MR801	390C9804	R,NETWORK
MR803 MR804 MR805	390C9805	R,NETWORK 4*1.0K 5% 1/6W
MR806 MR807		
MC801 MC802 MC803	39013042	C,CERAMIC 25V 0.01UF
MC804		
⚠L591 ⚠L592	60919121	COIL,H.LIN. N-59 (16T)
⚠L590	60919122	COIL,H.LIN. N-60 (10T)
L5S1	610E1717	COIL,FILTER 10UH
L710 L711 L712	610E1726	COIL,FILTER 56UH
⚠L602	610F5002	FERRITE BEADS (B-02-RT)
L720 L721 L722	610F6014	COIL,FILTER 5.6UH
L901 L902 L903	610F7619	COIL,FILTER 0.15UH
L8A5	61055001	COIL,FILTER 8500UH
⚠FL601	61062171	LINE FILTER (4.3A 2.7MH)

SYMBOL	PARTS NO	DESCRIPTION
	61062178	POWER LINE FILTER
⚠L5E1 L5G0 L5G2	61064006	COIL,FILTER 50UH
⚠L5M0 L8A1 L8A2		
⚠L594	61070135	FILTER CHOKE 4MH
⚠L601	61072349	COIL,FILTER
L704	61099011	COIL,CHOKE 33UH
⚠L653	61099013	COIL,CHOKE 10UH
⚠L652	61099014	COIL,CHOKE 33UH
⚠L593	61099019	COIL,CHOKE 10MH
⚠L651	61099036	FILTER CHOKE
L8A3	61099047	FILTER CHOKE
DEG	61321104	COIL,DEGAUSSING
LC901	616K6028	NOISE FILTER 1H223X-TA
LC701 LC702 LC703	616K6801	NOISE FILTER 2R2-101-T
LC704		
LC711 LC712 LC713	616K6946	NOISE FILTER TH28123MA
LC714 LC715 LC902		
LC708 LC709 LC710	616K6964	NOISE FILTER TX07250NBT
LC705 LC706 LC707	616K6965	NOISE FILTER TX09500NBT

*** PWB ASSYS ***

	84N67A01	SW.REG PWB ASSY
	84N68C01	VIDEO PWB ASSY
	84N68D01	DEF PWB ASSY
	84N68J01	CRT PWB ASSY
	84N68M03	CPU PWB ASSY
	84N68S02	SDP PWB ASSY
	84N68T02	TR PWB ASSY

*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***

HS2	31709105	SHEET,HEAT SINK
HS1	31709204	SHEET,HEAT SINK
HS582	31709503	SHEET,INSULATOR
HS581	31709507	SHEET,INSULATOR HEAT SINK
HS3	31709612	SHEET INSULATOR M-45
HS5A4	31709614	SHEET,INSULATOR M-45
SG901 SG902 SG903	329J0047	ARRESTER (300V),AT52
SG904		
X801	64098031	X'TAL 12000KHZ
⚠F651	66653017	FUSE 125V 4A-UC
⚠F601	66653052	FUSE MF51NM125V6.3A-UC
SG951	667K7001	SPARK GAP 1.2KV
SG905	66706002	SPARK GAP 1.5KV
	70032054	SG/CRT SOCKET(DBF)
	70051321	RECEPTACLE 1P
CN-D2	70056398	MINI D-SUB COCKET 15PV
CN-D1	70056399	D-SUB SOCKET 15PV
	70810757	LINE CORD 3P L=1.8
	71205037	HOLDER,FUSE
	73893105	CABLE,SIGNAL D15P-MD15P
	74004891	CAP

*** APPEARANCE PARTS ***

	25282981	SCREW REVET
	25283511	JOINT

SYMBOL	PARTS NO	DESCRIPTION
	25314021	CABINET BACK(A) ASSY
	25314041	CABINET BACK(B) ASSY
	25314062	CABINET BOTTOM
	25315701	CABINET FRONT ASSY
	25419341	HOOK (B)
	25419402	REVOLVING SPINDLE
	25419491	ESCUTCHEON
	25419501	REVOLVING STAND ASSY
	25421111	LID CONTROL ASSY
	25534631	COIL SPRING
	25607291	SLIDE SHEET
	25612281	FOOT RUBBER (D21)
	25757643	LABEL(REV.)
	25775701	LABEL (CONTROL)
	25776781	NAME PLATE,INSTRUCTION

*** KNOBS & PUSH BUTTONS ***

SYMBOL	PARTS NO	DESCRIPTION
	25454691	KNOB,SLIDE
	25454741	PUSH BUTTON (SW)
	25454752	KNOB,CONTROL

*** PRINTED & PACKING MATERIALS ***

SYMBOL	PARTS NO	DESCRIPTION
	24L13513	**CARD, DHHS-NEC**
	24M02911	**BAG, POLYETHYLENE (DHHS)**
	24813191	BAG,POLYETHYLENE(150*370)
	24814531	BAG,POLYEHYLENE (180*350)
	25815061	BAG,POLYETHYLENE (270X370
	25822831	SHEET PROTECTION
	25823512	CARTON BOX(B)
	25823522	FILLER T,CARTON
	25823532	FILLER B,CARTON
	25826441	CARTON BOX(T)(JC-2142UMA)
	25826571	CORNER ANGLE
	78126652	INSTRUCTION BOOK
	78652361	TEMPLATE(JC-1742/2142)

*** RESISTORS ***

SYMBOL	PARTS NO	DESCRIPTION
R406	401C6609	R,CARBON 2.2H 5% 1/4W
R583 R584	401C6651	R,CARBON 120H 5% 1/4W
⚠R668	401C6657	R,CARBON 220H 5% 1/4W
⚠R667 R834	401C6665	R,CARBON 470H 5% 1/4W
R124	401C6667	R,CARBON 560H 5% 1/4W
R5R6	401C6669	R,CARBON 680H 5% 1/4W
R578	401C6677	R,CARBON 1.5K 5% 1/4W
R911	401C6689	R,CARBON 4.7K 5% 1/4W
⚠R5E8	401C6691	R,CARBON 5.6K 5% 1/4W
⚠R5AA ⚠R5AC	401C6745	R,CARBON 1.0M 5% 1/4W
R8C4	401C6761	R,CARBON 4.7M 5% 1/4W
⚠R5GA	401G6127	R,CARBON 12H 5% 1/4W
⚠R491	401G6173	R,CARBON 1.0K 5% 1/4W
⚠R5N4	401G6185	R,CARBON 3.3K 5% 1/4W
⚠R5D4	401G6191	R,CARBON 5.6K 5% 1/4W
⚠R5A9	401G8137	R,CARBON 33H 5% 1/2W
R904 R905 R906	401H5645	R,CARBON 68H 5% 1/2W

SYMBOL	PARTS NO	DESCRIPTION
R790 R791 R792	401H5657	R,CARBON 220H 5% 1/2W
R725 R726 R727	401H5661	R,CARBON 330H 5% 1/2W
⚠R619	401H5667	R,CARBON 560H 5% 1/2W
R985	401H5677	R,CARBON 1.5K 5% 1/2W
R8A4	401H5681	R,CARBON 2.2K 5% 1/2W
R8A1	401H5683	R,CARBON 2.7K 5% 1/2W
⚠R655	401H5705	R,CARBON 22K 5% 1/2W
⚠R601	401H5729	R,CARBON 220K 5% 1/2W
R974 R975	401H5731	R,CARBON 270K 5% 1/2W
⚠R603	401H5737	R,CARBON 470K 5% 1/2W
⚠R5N5	401H5741	R,CARBON 680K 5% 1/2W
⚠R5E7 R524 R7F4	401J9820	RD16Z,0H,AT52
R7F5 R8F9 R865		
R50F R51C R54F	401K5601	R,CARBON 1H 5% 1/6W
R56X		
R5K6 R909	401K5633	R,CARBON 22H 5% 1/6W
R7C0 R7C1 R7C2	401K5639	R,CARBON 39H 5% 1/6W
R5N2	401K5641	R,CARBON 47H 5% 1/6W
R8D0	401K5643	R,CARBON 56H 5% 1/6W
R970	401K5647	R,CARBON 82H 5% 1/6W
⚠R2011 R408 R57E	401K5649	R,CARBON 100H 5% 1/6W
R59A R59C R59E		
R59F R59G R59W		
⚠R662 R7A0 R7A1		
R7A2 R7G1 R750		
R751 R752 R910		
R966		
R719 R720 R721	401K5653	R,CARBON 150H 5% 1/6W
R722 R723 R724		
R760 R761 R762		
R784 R785 R786		
R110 R8E7	401K5655	R,CARBON 180H 5% 1/6W
R56S ⚠R615 R8F4	401K5657	R,CARBON 220H 5% 1/6W
R2102 R513 R802	401K5659	R,CARBON 270H 5% 1/6W
R56M R58C R7G0	401K5661	R,CARBON 330H 5% 1/6W
R7A3 R7A5 R7A7	401K5663	R,CARBON 390H 5% 1/6W
R781 R782 R783	401K5665	R,CARBON 470H 5% 1/6W
R8C6		
R596 R598 R8L3	401K5667	R,CARBON 560H 5% 1/6W
R121 ⚠R672 R756	401K5669	R,CARBON 680H 5% 1/6W
R757 R758 R8E6		
R8H0		
R775 R777 R779	401K5671	R,CARBON 820H 5% 1/6W
R111 R409 R454	401K5673	R,CARBON 1.0K 5% 1/6W
R455 R5A8 ⚠R5EA		
⚠R5E4 ⚠R5E5 R5W4		
R5W5 R516 R53L		
R535 ⚠R605 ⚠R674		
R738 R787 R788		
R789 R8K8 R8K9		
R810 R811 R832		
R857 R858 R859		
R86A R86C R871		
R873 R877 R878		
R879 R880 R882		
R956 R957		
R511 ⚠R659 R8H6	401K5675	R,CARBON 1.2K 5% 1/6W
R8H8		
R474 R5A7 ⚠R5D3	401K5677	R,CARBON 1.5K 5% 1/6W

SYMBOL			PARTS NO	DESCRIPTION
R528	⚠R657	⚠R658	401K5677	R,CARBON 1.5K 5% 1/6W
R8G9	R8H2			
R5R5	R793	R971	401K5679	R,CARBON 1.8K 5% 1/6W
R407	R466	R57K	401K5681	R,CARBON 2.2K 5% 1/6W
R7G2	R7G3	R731		
R732	R735	R736		
R737	R739	R8C1		
R8C2	R816	R983		
R5A0	R5A4	R5A5	401K5683	R,CARBON 2.7K 5% 1/6W
⚠R5E0	R5U7	R8H7		
R801	R870	R876		
⚠R201G	R411	R5X6	401K5685	R,CARBON 3.3K 5% 1/6W
R52F	R59L	R59S		
R59T	R590	R595		
R597	R707	R709		
R711	R713	R715		
R717	R776	R778		
R780	R8G4	R8G5		
R8G6	R8G7	R8G8		
R8H1	R8H5	R8H9		
R8L0	R8L1	R863		
R872	R965			
R463	R5K5	R5N0	401K5687	R,CARBON 3.9K 5% 1/6W
R50K	R51K	R52K		
R53K	R54K	R55K		
R58K	R7A4	R7A6		
R7A8	R7G4	R8E0		
⚠R201M	R401	R462	401K5689	R,CARBON 4.7K 5% 1/6W
R5H1	R5R4	R533		
⚠R663	R763	R8K4		
R8K5	R866			
⚠R2006	R465	⚠R5D2	401K5691	R,CARBON 5.6K 5% 1/6W
⚠R5E1	⚠R5E9	R5Y4		
R520	R7C4	R7C6		
R7C8	R8E1	R8G0		
R8G2	R8K0	R8K1		
R8K2				
R120	⚠R201H	R5G1	401K5693	R,CARBON 6.8K 5% 1/6W
R5G5	R5K7	R5M0		
R5N1	R5T6	R514		
R745	R803	R818		
R5H4	R7E2	R7E3	401K5695	R,CARBON 8.2K 5% 1/6W
R7E4	R8A9	R862		
R864	R869			
⚠R2007	⚠R201K	⚠R2010	401K5697	R,CARBON 10K 5% 1/6W
⚠R2020	R464	R475		
R5G2	R5M8	R5S3		
R5S4	R5T1	R5T2		
R5T4	R5U0	R5U2		
R5U3	R5X1	R5X4		
R5Y3	R50M	R504		
R505	R515	R526		
R527	R529	R53S		
R544	R569	⚠R652		
R7E5	R7E6	R7E7		
R7F3	R708	R710		
R712	R714	R716		
R718	R742	R744		
R764	R765	R766		
R767	R768	R769		
R772	R773	R774		
R8A2	R8A3	R8C0		
R8C7	R8F8	R805	401K5697	R,CARBON 10K 5% 1/6W
R807	R808	R809		
R850	R851	R852		
R867	R868	R874		
R884	R907	R913		
R951	R952	R979		
R982	R984	R987		
⚠R2013	R402	R420	401K5699	R,CARBON 12K 5% 1/6W
⚠R5E2	R5G4	R5R0		
R5R7	R512	R523		
R59N	R741	R743		
R886	R964			
R2104	R421	R5H0	401K5701	R,CARBON 15K 5% 1/6W
⚠R614	⚠R670	R8A5		
R8A6	R8K3	R817		
R5X7			401K5703	R,CARBON 18K 5% 1/6W
⚠R201L	R404	R5H5	401K5705	R,CARBON 22K 5% 1/6W
R5M2	R5T7	R5U9		
R5W9	R522	⚠R613		
⚠R660	R7F0	R7F1		
R7F2	R730	R734		
R8A8	R8C3	R8K6		
R976	R978			
R424	R451	R5T3	401K5707	R,CARBON 27K 5% 1/6W
R5U6	R5Y6	R50T		
R52T	R53T	R54T		
R55T	R58T	R981		
R989				
⚠R2012	R2101	R423	401K5709	R,CARBON 33K 5% 1/6W
R5C4	⚠R5D5	R5H8		
R5M6	R503	R509		
R531	R532	R534		
R568	R7D9	R7E0		
R7E1	R853	R854		
R855	R856	R885		
R955	R962			
⚠R200A	⚠R200C	⚠R201E	401K5711	R,CARBON 39K 5% 1/6W
R422	R443	R482		
R837				
R5A3	R5H2	R5H3	401K5713	R,CARBON 47K 5% 1/6W
R5S8	R5T0	⚠R669		
R7C3	R7C5	R7C7		
R806	R914	R954		
R980				
⚠R200F	R436	R437	401K5715	R,CARBON 56K 5% 1/6W
R483	R5M7	R56G		
R56H	R8F2	R958		
R960				
R450	R5S7	R5S9	401K5717	R,CARBON 68K 5% 1/6W
R5Y5	R502	⚠R671		
R5H7	R5T8	R56T	401K5719	R,CARBON 82K 5% 1/6W
R59M	R7D6	R7D7		
R7D8	R835			
⚠R2008	⚠R201F	R431	401K5721	R,CARBON 100K 5% 1/6W
R433	R434	R435		
R452	R453	R5G7		
R5U1	R5U8	R5W2		
R5W3	R5X5	R56C		
R58H	⚠R620	R8H3		
R961	R986			
R484	R5K3	R5M3	401K5723	R,CARBON 120K 5% 1/6W
R56A	R56F	R953		

SYMBOL	PARTS NO	DESCRIPTION
⚠R2009 R5S6 R56E	401K5725	R,CARBON 150K 5% 1/6W
R7D3 R7D4 R7D5		
R50H R50L R8A7	401K5727	R,CARBON 180K 5% 1/6W
R5G8 R5W0 R7D0	401K5729	R,CARBON 220K 5% 1/6W
R7D1 R7D2 R8G1		
R8G3 R8K7 R988		
R438 R56W R836	401K5731	R,CARBON 270K 5% 1/6W
R5N7 R7F6 R7F7	401K5733	R,CARBON 330K 5% 1/6W
R7F8		
R51H	401K5735	R,CARBON 390K 5% 1/6W
R5G3 R52H R912	401K5737	R,CARBON 470K 5% 1/6W
R959		
R53H R8C5	401K5743	R,CARBON 820K 5% 1/6W
R5G9 R5M5 R54H	401K5745	R,CARBON 1.0M 5% 1/6W
R8C8		
R55H	401K5747	R,CARBON 1.2M 5% 1/6W
R492 R908	401K5749	R,CARBON 1.5M 5% 1/6W
⚠R201D ⚠R210C	401K5753	R,CARBON 2.2M 5% 1/6W
R501	401K5757	R,CARBON 3.3M 5% 1/6W
R5G6	40175101	R,CARBON 1H 5% 1/4W
⚠R5C1 ⚠R5C2 ⚠R612	40175125	R,CARBON 10H 5% 1/4W
⚠R5M1	40175127	R,CARBON 12H 5% 1/4W
⚠R611	40175145	R,CARBON 68H 5% 1/4W
R581 R582	40298004	R,WIRE 1.0H 1% 5W
⚠R602	40299104	R,WIRE 10H 5% 5W
R8F6	403F1121	R,METAL OXIED 6.8H 5% 1W
R8F7	403F1131	R,METAL OXIED 18H 5% 1W
⚠R57T	403F1137	R,METAL 33H 5% 1W
R405	403F1165	R,METAL 470H 5% 1W
R5A6 ⚠R5E3	403F1173	R,METAL OXIED 1.0K 5% 1W
R5A1	403F1177	R,METAL OXIDE 1.5K 5% 1W
R410	403F2101	R,METAL 1.0H 5% 2W
R8F0	403F2103	R,METAL OXIDE 1.2H 5% 2W
R8F3	403F2109	R,METAL 2.2H 5% 2W
R8F5	403F2113	R,METAL OXIDE 3.3H 5% 2W
R883	403F2149	R,METAL OXIDE 100H 5% 2W
R7G5 R8E4 R8E5	403F2151	R,METAL OXIDE 120H 5% 2W
R476 R477	403F2169	R,METAL OXIDE 680H 5% 2W
R519	403F2171	R,METAL 820H 5% 2W
R8F1	403F3137	R,METAL OXIDE 33H 5% 3W
⚠R599	403F3141	R,METAL OXIDE 47H 5% 3W
R456 R457	403F3143	R,METAL OXIDE 56H 5% 3W
R861	403F3159	R,METAL OXIDE 270H 5% 3W
R521	403F3163	R,METAL OXIDE 390H 5% 3W
⚠R5D6	403F3173	R,METAL OXIDE 1.0K 5% 3W
⚠R57V	403F3177	R,METAL OXIDE 1.5K 5% 3W
R967 R968	403F3209	R,METAL OXIDE 33K 5% 3W
⚠R5D7	40318994	R,METAL 2.2K 5% 5W
⚠R656	40372135	R,METAL 27H 5% 2W
⚠R604	40372151	R,METAL 120H 5% 2W
⚠R666	40372175	R,METAL 1.2K 5% 2W
⚠R607	40372191	R,METAL 5.6K 5% 2W
⚠R665	40372197	R,METAL 10K 5% 2W
⚠R606 ⚠R664	40372213	R,METAL 47K 5% 2W
⚠R608 ⚠R609	40372329	R,METAL 0.22H 5% 2W

SYMBOL	PARTS NO	DESCRIPTION
⚠R651 ⚠R654	40373135	R,METAL 27H 5% 3W
⚠R610	40373149	R,METAL 100H 5% 3W
⚠R616 ⚠R617	40373209	R,METAL 33K 5% 3W
R8E8	40399049	R,METAL 82H 5% 3W
R701 R702 R703	404C1646	R,METAL 75H 1% 1/6W
R704 R705 R706		
R795 R796 R797	404C1653	R,METAL 150H 1% 1/6W
R50C	404C1675	R,METAL 1.2K 1% 1/6W
⚠R2018	404C1677	R,METAL 1.5K 1% 1/6W
R58F	404C1681	R,METAL 2.2K 1% 1/6W
R122 R537 ⚠R661	404C1683	R,METAL 2.7K 1% 1/6W
R5A2	404C1685	R,METAL 3.3K 1% 1/6W
R51F R58A ⚠R653	404C1689	R. METAL 4.7K 1% 1/6W
R123	404C1691	R,METAL 5.6K 1% 1/6W
R403 R8H4	404C1694	R,METAL 7.5K 1% 1/6W
R52C	404C1695	R,METAL 8.2K 1% 1/6W
⚠R2019 R5X0 R50A	404C1697	R,METAL 10K 1% 1/6W
R56R R729 R8E2		
R8E3 R840 R843		
R846 R849		
R472 R53C R58G	404C1699	R,METAL 12K 1% 1/6W
R5S5 R50G R536	404C1703	R,METAL 18K 1% 1/6W
R576 R579		
R5F4 R51G R53F	404C1705	R,METAL 22K 1% 1/6W
R538 R573 R577		
R425 R51A R54C	404C1707	R,METAL 27K 1% 1/6W
R52G R55C	404C1709	R,METAL 33K 1% 1/6W
R5U4 R5U5	404C1710	R,METAL 36K 1% 1/6W
R447 R52A R53G	404C1711	R,METAL 39K 1% 1/6W
R55F		
R471 R5S0	404C1713	R,METAL 47K 1% 1/6W
R445 R5X2 R5X3	404C1715	R,METAL 56K 1% 1/6W
R56L R572		
R426 R429 R5F3	404C1717	R,METAL 68K 1% 1/6W
R510 R57A		
R473	404C1719	R,METAL 82K 1% 1/6W
⚠R2001 R5F8 R5S1	404C1721	R,METAL 100K 1% 1/6W
R5S2 R5X9 R5Y1		
R5Y2 R50E R507		
R51E R52E R53A		
R53E R54E R54G		
R55E R56K R58E		
R838 R841 R844		
R847		
R55G R574	404C1723	R,METAL 120K 1% 1/6W
R839 R842 R845	404C1724	R,METAL 130K 1% 1/6W
R848		
R5N9 R54A	404C1725	R,METAL 150K 1% 1/6W
R428 R440 R442	404C1727	R,METAL 180K 1% 1/6W
R446 R5X8 R508		
R430 R444 R506	404C1729	R,METAL 220K 1% 1/6W
R55A R571 R575		
R427	404C1737	R,METAL 470K 1% 1/6W
R441	404C1743	R,METAL 820K 1% 1/6W
R439	404C1745	R,METAL 1.0M 1% 1/6W
⚠R5C3 ⚠R5D1 ⚠R5F9	404K5109	R,METAL 2.2H 5% 1/4W
⚠R57H ⚠R570		

SYMBOL	PARTS NO	DESCRIPTION
⚠R461 ⚠R591	404K5117	R,METAL 4.7H 5% 1/4W
⚠R481 ⚠R5F2 ⚠R860	404K5125	R,METAL 10H 5% 1/4W
⚠R5F0 ⚠R57F ⚠R57L	404K5141	R,METAL 47H 5% 1/4W
⚠R5R8	40405125	R,METAL 10H 5% 1/4W
⚠R5N3	408A8107	R,FUSE 1.8H 5% 1/2W
⚠R592 ⚠R593 ⚠R594	408A8157	R,FUSE 220H 5% 1/2W
⚠R57G	409A6149	R,FUSE 100H 5% 1/4W

*** CAPACITORS ***

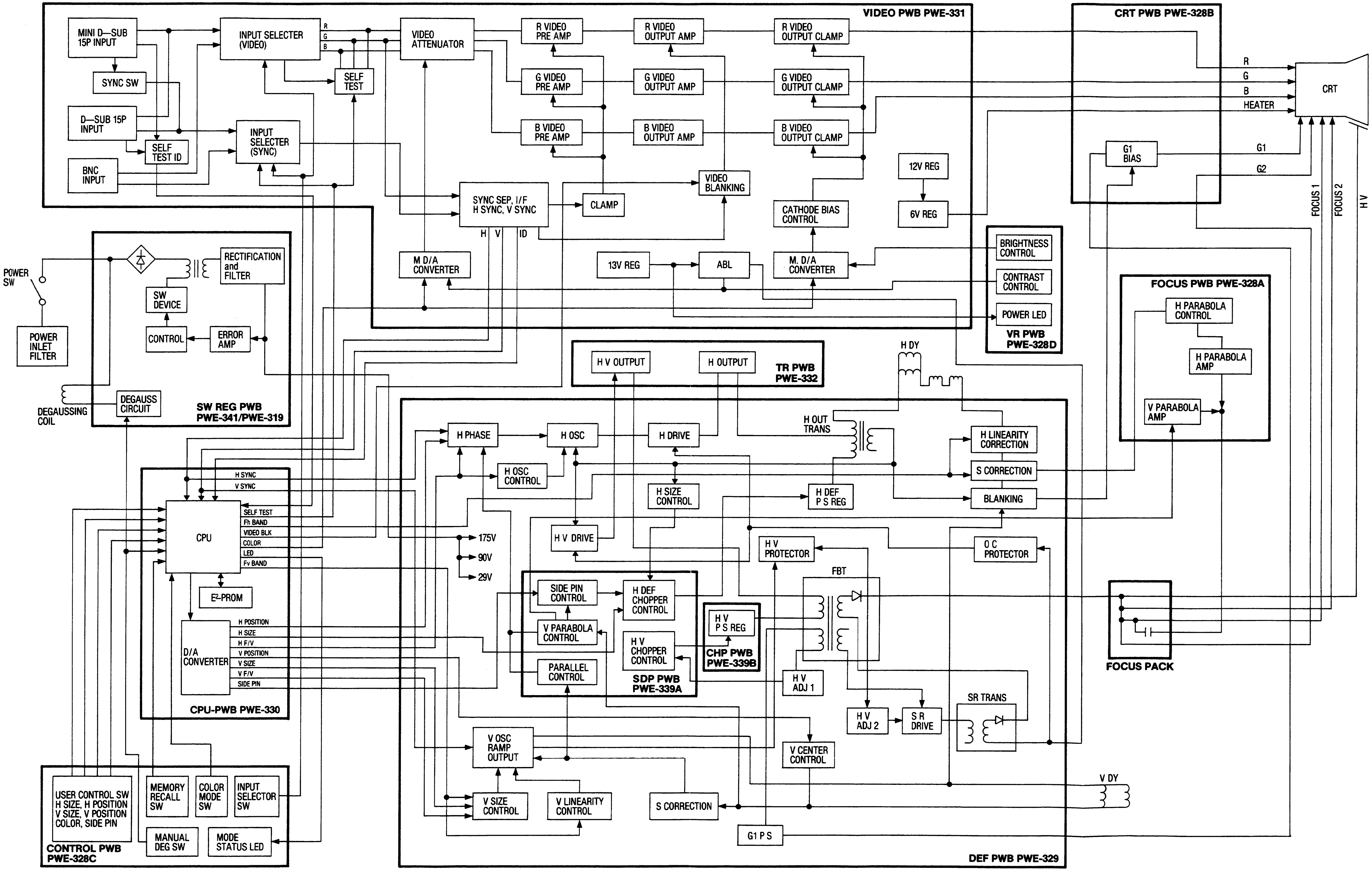
C903	420C9551	C,CERAMIC 500V 100PF
C481 C5G8 ⚠C591	420C9563	C,CERAMIC 500V 1000PF
⚠C592 ⚠C593 C7A6		
C7A7 C7A8 C904		
C574	420C9567	C,CERAMIC 500V 2200PF
C7E9 C796 C797	420C9569	C,CERAMIC 50V 3300PF
C798		
⚠C609	420EC067	C,CERAMIC 400V 2200PF
C901	4203J575	C,CERAMIC 500V 0.01UF
C905	42040108	C,CERAMIC 2KV 0.01UF
⚠C603 ⚠C604	42053013	C,CERAMIC 400V 1000PF
⚠C658	42099086	C,CERAMIC 2KV 1000PF
⚠C611 ⚠C618	42099088	C,CERAMIC 2KV 220PF
⚠C651 ⚠C655	42099095	C,CERAMIC 2KV 330PF
⚠C607 ⚠C614	42099096	C,CERAMIC 2KV 470PF
C451 C518 C521	421A0425	C,CERAMIC 50V 0.01UF
C530 C57A C810		
C811		
C5R1	421C0205	C,CERAMIC 50V 220PF
C401 C762 C763	421C0213	C,CERAMIC 50V 1000PF
C764 C777 C778		
C779 C8A9 C867		
C737 C738 C739	421C0219	C,CERAMIC 50V 3300PF
C5G1 C7D4 C7D5	421C0225	C,CERAMIC 50V 0.01UF
C7D6 C707 C708		
C709 C710 C711		
C712 C718 C719		
C720 C759 C760		
C761 C768 C769		
C770 C784 C785		
C786 C790 C791		
C792		
C86A C86C	421C3461	C,CERAMIC 16V 0.01UF
C5S1 C5S8 C5S9	421D6009	C,CERAMIC 25V 0.1UF
C5T0 C5T1 C5T2		
C5X0 C504 C59E		
C59F C59G C59H		
C59K C59M C7E5		
C7E6 C7E7 C7E8		
C7F0 C7F1 C7F2		
C714 C716 C753		
C754 C755 C8A8		
C8H7 C8K3 C8K4		
C8K7 C8K8 C8K9		
C802 C826 C827		
C829 C830 C834		
C835 C864 C865		
C868 C869 C870		
C958 C965		
C200P C2021 C406	421D6013	C,CERAMIC 50V 0.1UF

SYMBOL	PARTS NO	DESCRIPTION
C47P C471 C5A5	421D6013	C,CERAMIC 50V 0.1UF
C5EP C50A C50R		
C50S C507 C51C		
C51P C56A C56C		
C57P C8C7 C8C8		
C5X1	421J9036	C,CERAMIC 25V 0.1UF
C8A1	423A1028	C,CERAMIC 50V 20PF
C509 C717	423A1045	C,CERAMIC 50V 100PF
C5G3 C8G9 C8K0	423A1057	C,CERAMIC 50V 330PF
C8K1 C8K2		
⚠C616	423A1100	C,CERAMIC 50V 390PF
C5G5 C5M0 C8K5	423A1101	C,CERAMIC 50V 470PF
C962		
C959	423A1103	C,CERAMIC 50V 560PF
C7D1 C7D2 C7D3	423A2015	C,CERAMIC 50V 10PF
C804 C805		
C820	423A2025	C,CERAMIC 50V 15PF
C5G0 C506 C787	423A2033	C,CERAMIC 50V 33PF
C788 C789		
⚠C5E2	423A2037	C,CERAMIC 50V 47PF
C781 C782 C783	423A2043	C,CERAMIC 50V 82PF
C529 C549 C966	423A2045	C,CERAMIC 50V 100PF
C5M5 C502 C510	423A2103	C,CERAMIC 50V 180PF
C511	423A2105	C,CERAMIC 50V 270PF
C515	427A7005	C,FILM 100V 0.0022UF
C8A6	427F4004	C,FILM 50V 1800PF
C8A7 C8H0	427F4009	C,FILM 50V 4700PF
⚠C5EA ⚠C5E6 C500	427F4013	C,FILM 50V 0.01UF
C8A5 C951 C957		
C516	427F4014	C,FILM 50V 0.012UF
C5G6	427F4021	C,FILM 50V 0.047UF
C5M2	427F4025	C,FILM 50V 0.1UF
⚠C5D2	427F4059	C,FILM 50V 4700PF
C412	427F4067	C,FILM 50V 0.022UF
C5G2	427F4601	C,FILM 50V 1000PF
C513	427F4603	C,FILM 50V 1500PF
C8D0	427F4605	C,FILM 50V 2200PF
C520	427F4610	C,FILM 50V 5600PF
C59N	427F4613	C,FILM 50V 0.01UF
C866	427F4617	C,FILM 50V 0.022UF
C5H7 C5H8 C5M4	427F4621	C,FILM 50V 0.047UF
C5M8		
⚠C661	427F4624	C,FILM 50V 0.082UF
C512 C578	427F4651	C,FILM 50V 1000PF
C955 C956 C963	427F4675	C,FILM 50V 0.1UF
C5A2 C5A3	427J9112	C,FILM 50V 1000PF
⚠C5D1	42703455	C,FILM 630V 2200PF
⚠C577	42703575	C,FILM 200V 0.1UF
⚠C664	42799057	C,FILM 100V 3300PF
C441 C442 ⚠C606	428B3013	C,METAL FILM 50V 0.1UF
⚠C662 C8G0 C8G2		
C402 ⚠C5D3	428B3021	C,METAL FILM 50V 0.47UF
C50C C8A2 C8D1	428B3025	C,METAL FILM 50V 1.0UF
⚠C613	428B3101	C,METAL FILM 50V 0.010UF
⚠C5E8 C5GE	428CJ022	C,METAL FILM 250V 0.1UF
⚠C666 ⚠C667	428D0053	C,METAL 100V 0.1UF

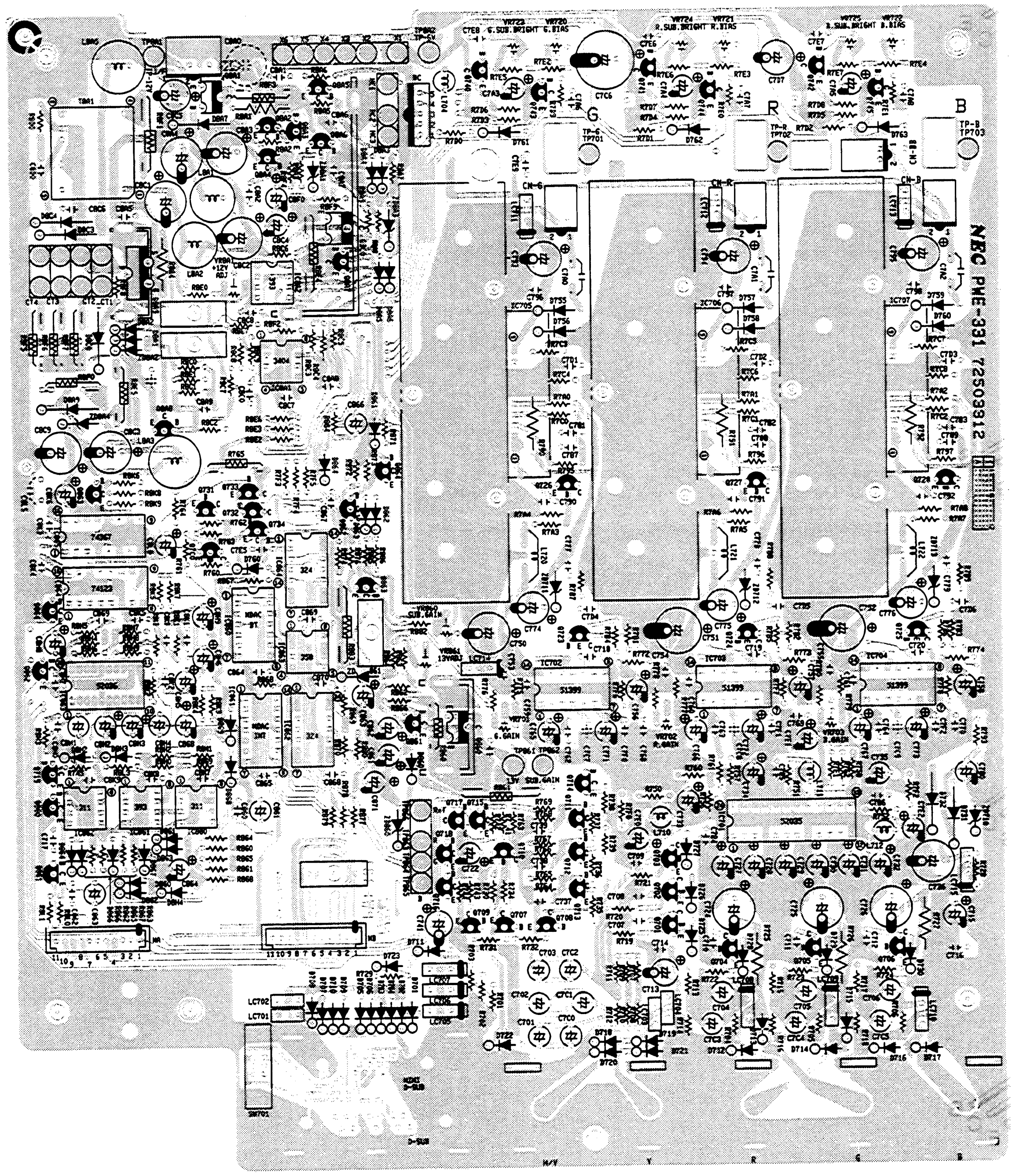
SYMBOL	PARTS NO	DESCRIPTION
C7A0 C7A1 C7A2	428D0097	C,FILM 250V 0.22UF
C907		
C409	428D4317	C,METAL FILM 100V 0.22UF
⚠C5A8 C964	428JJ115	C,METAL 1000V 0.047UF
C960	42808501	C,METAL FILM 1.6KV 1000PF
⚠C654	42809001	C,METAL FILM 100V 0.01UF
⚠C581	42817101	C,METAL 1600V 1500PF
⚠C5A6	42817103	C,METAL FILM 2.0KV 1700PF
⚠C582	42817201	C,METAL 1600V 6200PF
⚠C610	42839022	C,METAL FILM 250V 0.1UF
⚠C59A ⚠C599	42839602	C,METAL 400V 0.12UF
⚠C598	42839604	C,METAL 400V 0.18UF
⚠C596	42839610	C,METAL 400V 0.39UF 5%
⚠C595	42839613	C,METAL 400V 0.56UF
⚠C597	42839631	C,METAL FILM 400V 0.6UF
⚠C59C	42839707	C,METAL 400V 0.27UF 5%
⚠C601	42898001	C,FILM AC250V 0.22UF
⚠C602 ⚠C619	42899098	C,FILM 250V 0.1UF
C7C6	430BJ518	C,ELEC 160V 33UF
C771 C772 C773	430B3104	C,ELEC 50V 3.3UF
C801	430B6017	C,ELEC 10V 220UF
⚠C2004 ⚠C2006 C733	430B6029	C,ELEC 16V 100UF
C734 C735 C969		
C5S6 C5S7 C508	430B6030	C,ELEC 16V 220UF
C724 C725 C726	430B6032	C,ELEC 16V 470UF
C736		
C5G9	430B6039	C,ELEC 25V 22UF
⚠C2002 C472 C5A1	430B6041	C,ELEC 25V 47UF
C5S4 C5S5 C5X2		
C57C C722 C741		
C780 C8H8		
C461	430B6054	C,ELEC 35V 100UF
C8L0	430B6060	C,ELEC 50V 0.47UF
C5M7 C517 C8H9	430B6061	C,ELEC 50V 1.0UF
C5S2	430B6063	C,ELEC 50V 3.3UF
C5H0 C5H1 C5X3	430B6064	C,ELEC 50V 4.7UF
C501 C8G8 C8H2		
C8H6		
C462 ⚠C5E0 C5H2	430B6065	C,ELEC 50V 10UF
C7E0 C7E1 C7E2		
C727 C728 C729		
C730 C731 C732		
C756 C757 C758		
C8G4 C8H5 C8K6		
C871		
⚠C2008 C5C0 C5GC	430B6066	C,ELEC 50V 22UF
C572		
⚠C5E9	430B6068	C,ELEC 50V 47UF
C571	430B6069	C,ELEC 50V 100UF
C590	430B6096	C,ELEC 100V 3.3UF
C8H3	430B6221	C,ELEC 50V 0.1UF
⚠C5F1	430B6516	C,ELEC 160V 10UF
C402	430B6530	C,ELEC 200V 10UF
C833	430B8135	C,ELEC 10V 220UF
C713 C715	430B8144	C,ELEC 16V 47UF
C803	430B8152	C,ELEC 25V 10UF

SYMBOL	PARTS NO	DESCRIPTION
C5GA	430B8180	C,ELEC 50V 22UF
C863	430B9016	C,ELEC 10V 100UF
C503 C8C9 C831	430B9017	C,ELEC 10V 220UF
C861 C967 C968	430B9025	C,ELEC 16V 10UF
C765 C766 C767	430B9026	C,ELEC 16V 22UF
C952 C953 C961	430B9028	C,ELEC 16V 47UF
C8C3	430B9031	C,ELEC 16V 330UF
C750 C751 C752	430B9032	C,ELEC 16V 470UF
⚠C5E7	430B9039	C,ELEC 25V 22UF
C5A4 C862	430B9041	C,ELEC 25V 47UF
⚠C665	430B9053	C,ELEC 35V 47UF
C411	430B9054	C,ELEC 35V 100UF
⚠C660	430B9057	C,ELEC 35V 470UF
C408	430B9061	C,ELEC 50V 1.0UF
⚠C5E3 ⚠C612 ⚠C615	430B9065	C,ELEC 50V 10UF
C2101 ⚠C5E4 C5G4	430B9066	C,ELEC 50V 22UF
C5M1		
C407	430B9070	C,ELEC 50V 220UF
C405	430B9071	C,ELEC 50V 330UF
C7A3 C7A4 C7A5	430B9512	C,ELEC 160V 1.0UF
C793 C794 C795	430B9513	C,ELEC 160V 2.2UF
C5G7 ⚠C59L C7D7	430B9552	C,ELEC 250V 1 UF
C832	430C0253	C,ELEC 25V 22UF
C8C1 C8C2	430C2105	C,ELEC 25V 470UF
C774 C775 C776	430C8423	C,ELEC 16V 470UF
C491	430C9154	C,ELEC 350V 3.3UF
C8C5	430J8109	C,ELEC 16V 47UF
⚠C659 ⚠C663	4302J059	C,ELEC 35V 2200UF
⚠C652	4302J105	C,ELEC 100V 470UF
⚠C653	4302J559	C,ELEC 250V 47UF
C410	4303D185	C,ELEC 50V 1500UF
C5A9 C5M6 C5M9	4303J222	C,ELEC 250V 2.2UF
C5H6	4303J224	C,ELEC 250V 4.7UF
C8A3 C8A4	43032175	C,ELEC 50V 220UF
⚠C656 ⚠C657 ⚠C669	4304A013	C,ELEC 160V 100UF
C5H9	4309H105	C,ELEC 200V 4.7UF
⚠C5E5	4309H106	C,ELEC 250V 22UF
⚠C605	43198001	C,ELEC 200V 1200UF
C583	43198002	C,ELEC 200V 47UF
C8C4	432K6011	C,ELEC 10V 220UF
C8F0	432K6208	C,ELEC 63V 33UF
C5S3	433A3033	C,ELEC 25V 10UF
C8H4	433A3058	C,ELEC 50V 4.7UF
⚠C5MC	433A4025	C,ELEC 16V 47UF
C8G1 C8G3 C8H1	433A4056	C,ELEC 50V 22UF
C7C0 C7C1 C7C2	433A6045	C,ELEC 16V 22UF
C7C3 C7C4 C7C5		
C701 C702 C703		
C704 C705 C706		
⚠C5EC	433A7013	C,ELEC 16V 47UF
C514	435A8307	C,TANTALUM 35V 1.0UF

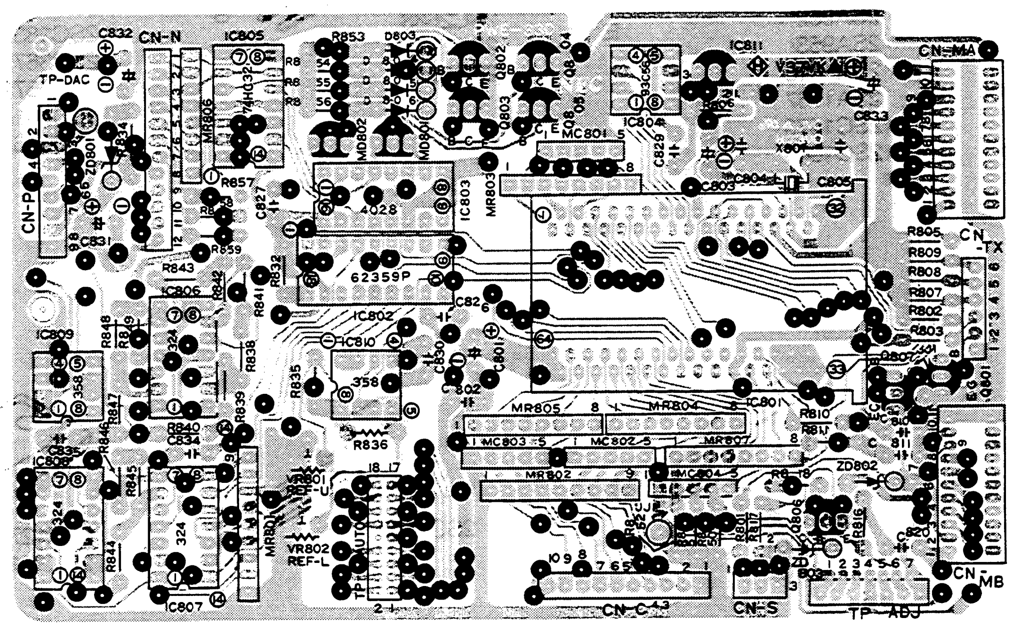
JC-2141UMA/B/B(EE)/R BLOCK DIAGRAM
JC-2142UMA


VIDEO PWB PWE-331
MINI D—SUB 15P INPUT
SYNC SW
D—SUB 15P INPUT
SELF TEST ID
BNC INPUT
INPUT SELECTER (VIDEO)
R
G
B
SELF TEST
INPUT SELECTER (SYNC)
VIDEO ATTENUATOR
R VIDEO PRE AMP
G VIDEO PRE AMP
B VIDEO PRE AMP
R VIDEO OUTPUT AMP
G VIDEO OUTPUT AMP
B VIDEO OUTPUT AMP
R VIDEO OUTPUT CLAMP
G VIDEO OUTPUT CLAMP
B VIDEO OUTPUT CLAMP
12V REG
6V REG
VIDEO BLANKING
SYNC SEP, I/F H SYNC, V SYNC
H
V
ID
CLAMP
CATHODE BIAS CONTROL
M D/A CONVERTER
13V REG
ABL
M. D/A CONVERTER
CRT PWB PWE-328B
G1 BIAS
R
G
B
HEATER
CRT
G1
G2
FOCUS 1
FOCUS 2
HV
BRIGHTNESS CONTROL
CONTRAST CONTROL
POWER LED
VR PWB PWE-328D
FOCUS PWB PWE-328A
H PARABOLA CONTROL
H PARABOLA AMP
V PARABOLA AMP
POWER SW
POWER INLET FILTER
DEGAUSSING COIL
RECTIFICATION and FILTER
SW DEVICE
CONTROL
ERROR AMP
DEGAUSS CIRCUIT
SW REG PWB PWE-341/PWE-319
TR PWB PWE-332
H V OUTPUT
H OUTPUT
H DY
H PHASE
H OSC
H DRIVE
H OUT TRANS
H LINEARITY CORRECTION
S CORRECTION
BLANKING
H OSC CONTROL
H SIZE CONTROL
H DEF P S REG
175V
90V
29V
H V DRIVE
H V PROTECTOR
O C PROTECTOR
FBT
SIDE PIN CONTROL
H DEF CHOPPER CONTROL
V PARABOLA CONTROL
H V CHOPPER CONTROL
PARALLEL CONTROL
SDP PWB PWE-339A
H V P S REG
CHP PWB PWE-339B
H V ADJ 1
H V ADJ 2
S R DRIVE
SR TRANS
FOCUS PACK
V OSC RAMP OUTPUT
V CENTER CONTROL
V SIZE CONTROL
V LINEARITY CONTROL
S CORRECTION
V DY
G1 P S
DEF PWB PWE-329
H SYNC
V SYNC
CPU
SELF TEST
Fh BAND
VIDEO BLK
COLOR
LED
Fv BAND
E²-PROM
D/A CONVERTER
H POSITION
H SIZE
H F/V
V POSITION
V SIZE
V F/V
SIDE PIN
CPU-PWB PWE-330
USER CONTROL SW H SIZE, H POSITION V SIZE, V POSITION COLOR, SIDE PIN
MEMORY RECALL SW
COLOR MODE SW
INPUT SELECTOR SW
MANUAL DEG SW
MODE STATUS LED
CONTROL PWB PWE-328C

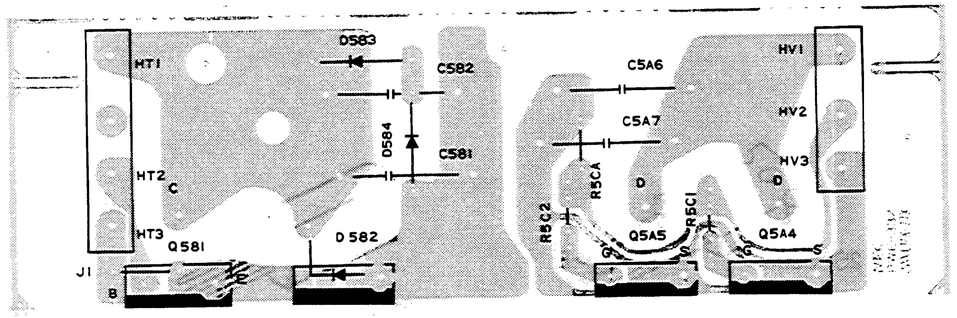
PRINTED WIRING BOARDS



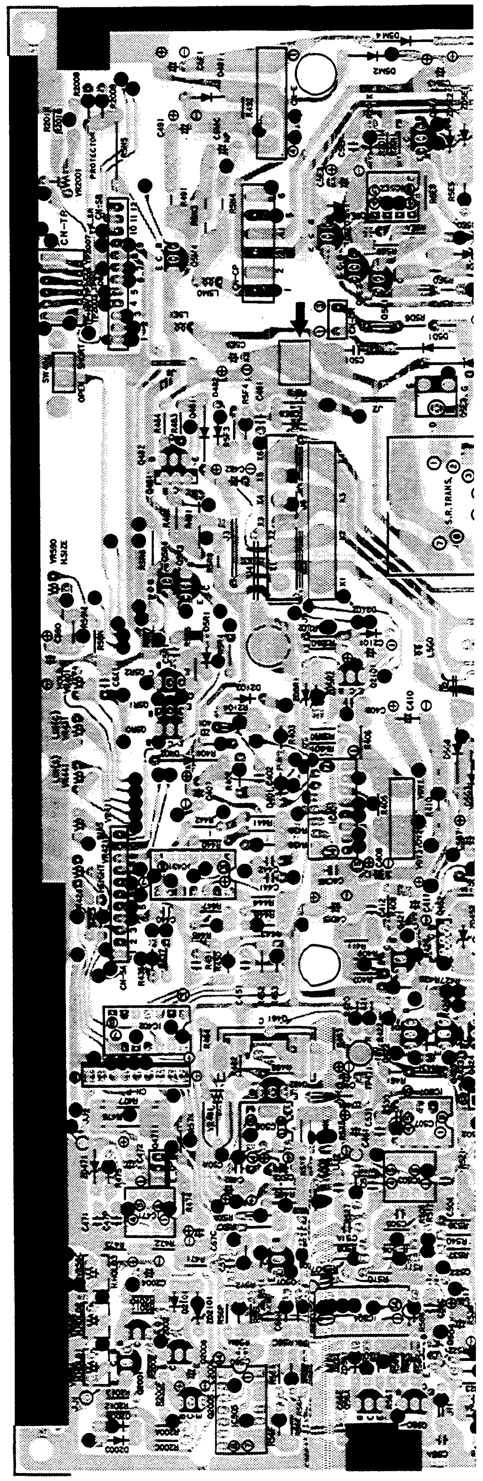
VIDEO PWB ASSY (PWE-331)
—Seethrough View of Reverse-Side Component—



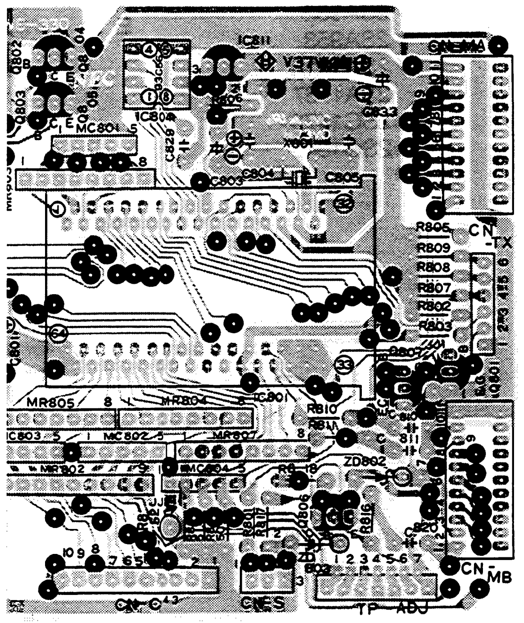
CPU PWB ASSY (PWE-330)
—Solder Side—


HT1
HT2
HT3
J1
B
C
Q581
D583
C582
D584
C581
D582
C5A6
C5A7
R5CA
R5C1
R5C2
Q5A5
Q5A4
HV1
HV2
HV3

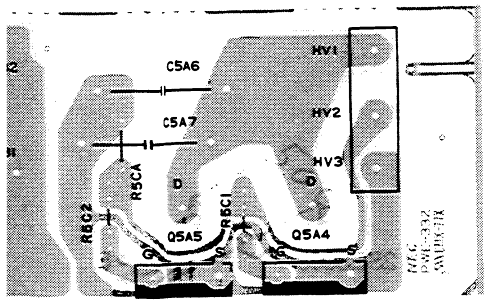
TR PWB (PWE-332)
—Solder Side—



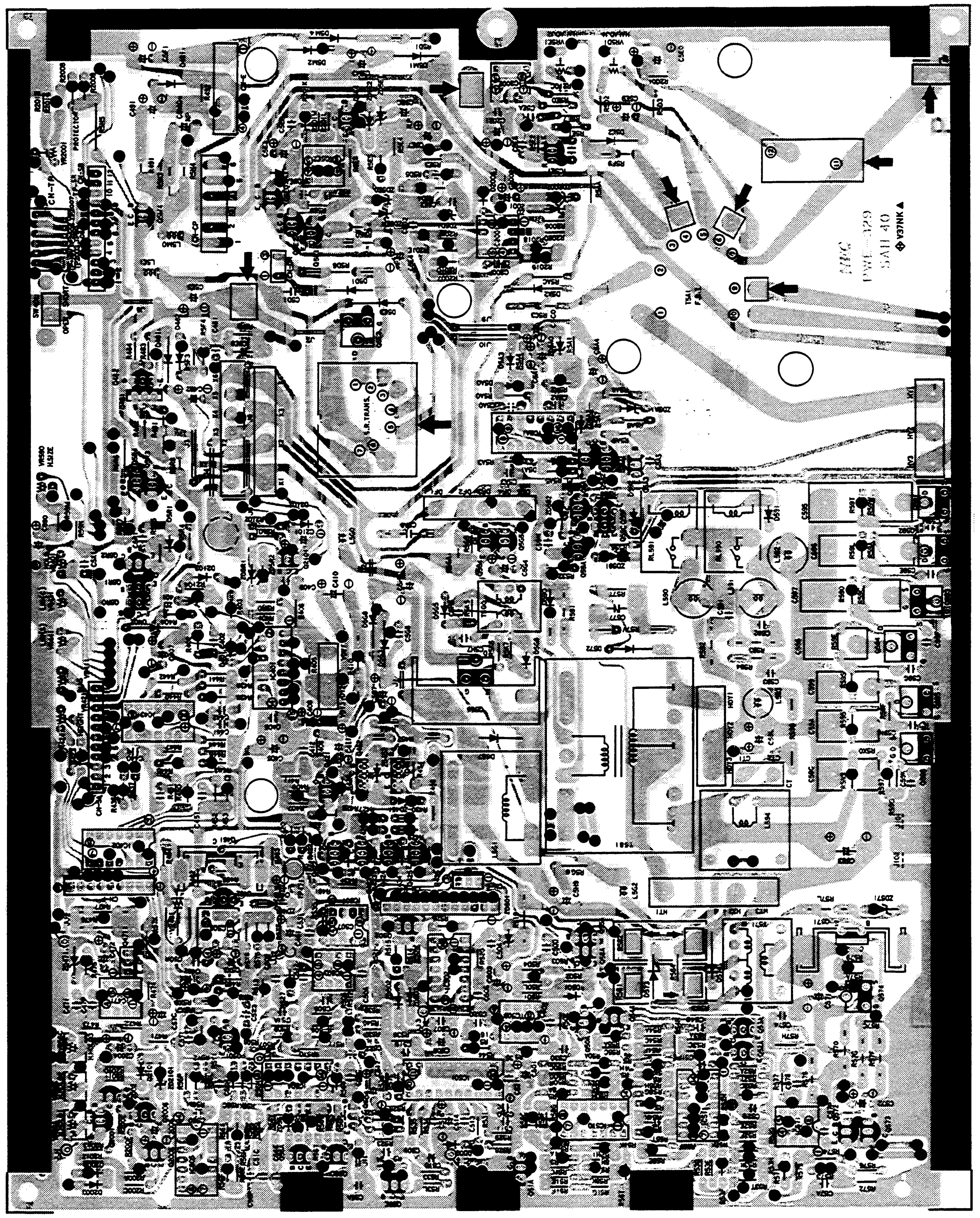
DE


IC811
V371
IC808
MC804
C804
C805
R805
R809
R808
R807
R802
R803
CN-TX
MR805
MR804
IC801
MC802
MR807
R810
ZD802
R816
CN-MB
CN-ES
TP-ADJ

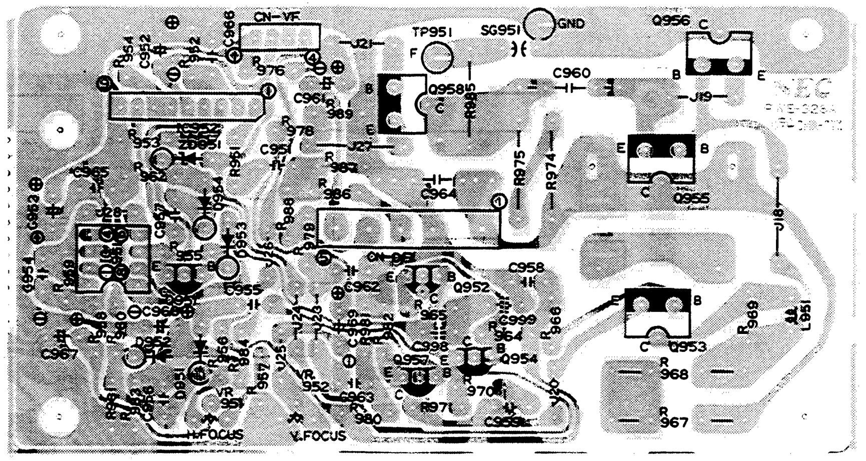
SY (PWE-330)
Side—

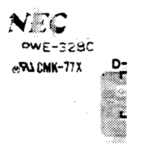

C5A6
C5A7
HV1
HV2
HV3
R5CA
R5C2
R5C1
Q5A5
Q5A4

(PWE-332)
er Side—

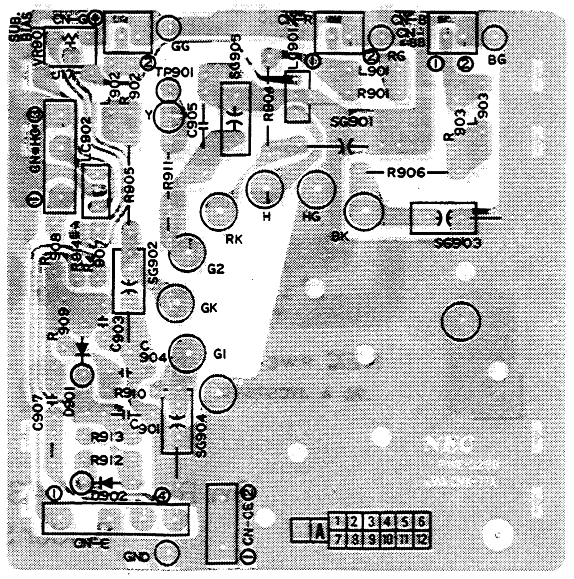


DEF PWB ASSY (PWE-329)
—Solder Side—

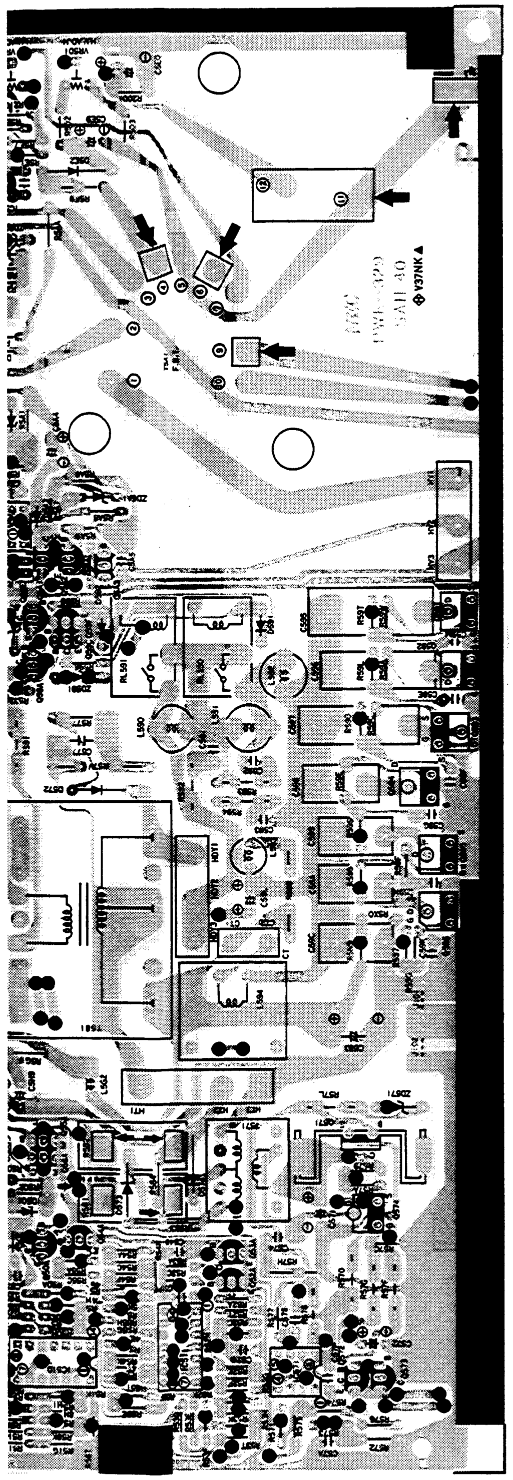

CN-VF
TP951
SG951
GND
Q956
Q958
C960
J19
J21
J22
R975
R974
C964
Q955
C958
Q952
C999
C962
Q954
Q953
C955
J18
L951
C967
R971
C959
H.FOCUS
V.FOCUS
NEC


NEC
PWE-328C

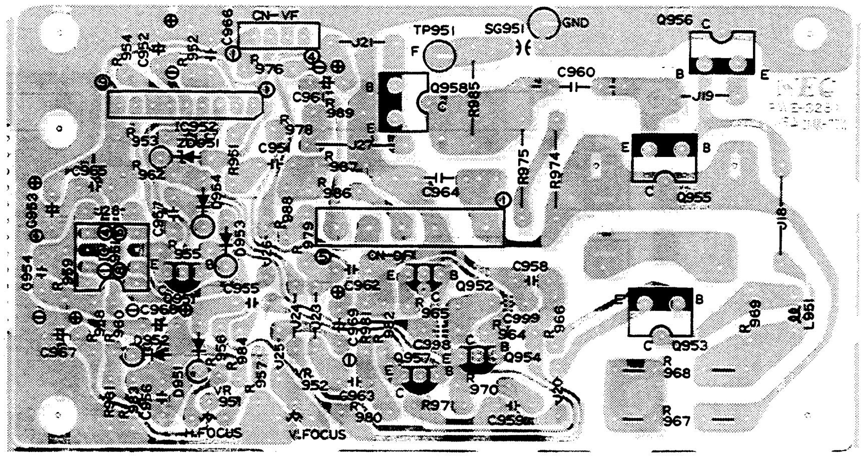
FOCUS PWB ASSY (PWE-328A)
—Solder Side—


GG
TP901
Y
R904
R901
L901
RG
BG
SG901
R903
R906
SG903
R911
R905
RK
H
HG
BK
SG902
G2
GK
GI
C907
R910
R913
R912
SG904
GND
CN-E
CN-CE
NEC
1 2 3 4 5 6
7 8 9 10 11 12

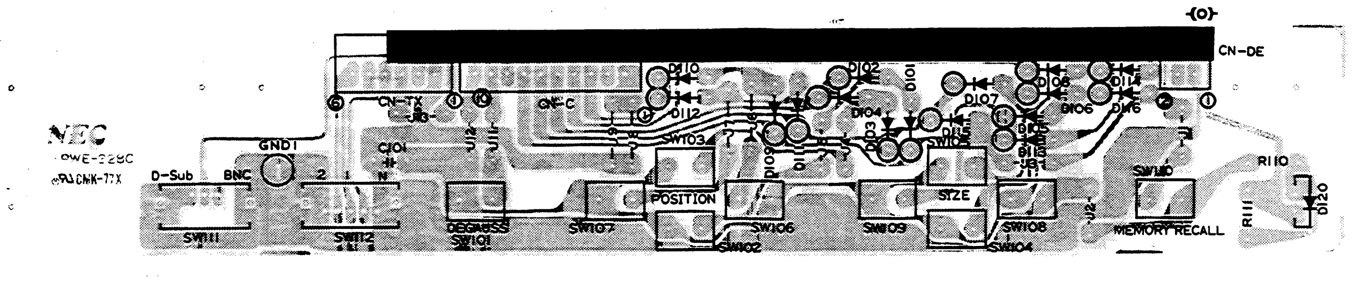
CRT PWB (PWE-328B)
—Solder Side—



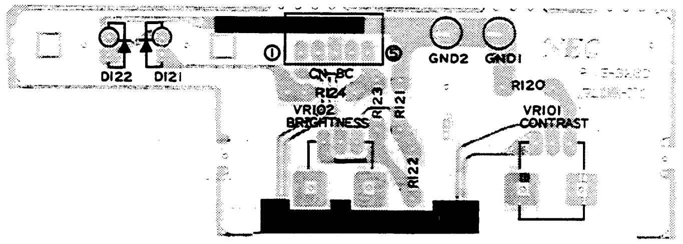
ᴾWE-329)
e—


CN-VF
TP951
SG951
GND
Q956
C960
Q958
Q955
Q952
Q953
Q954
Q957
CN-951
C964
C958
C959
C963
D951
VR 951
H.FOCUS
V.FOCUS
L951

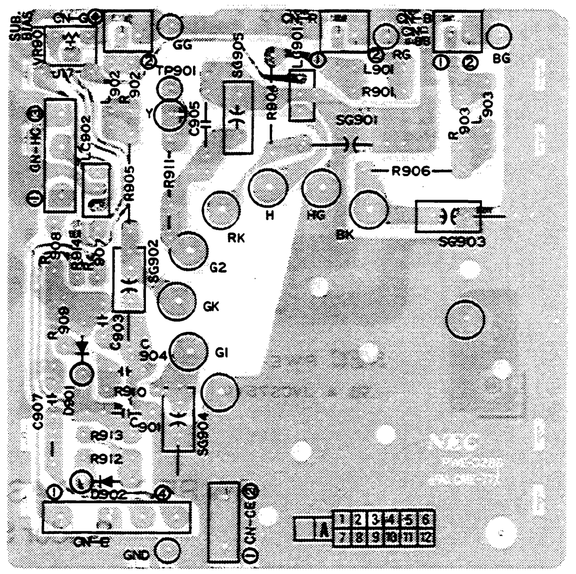
FOCUS PWB ASSY (PWE-328A)
—Solder Side—


NEC
PWE-328C
CN-DE
CN-TX
CN-C
GND1
D-Sub
BNC
C101
SW111
SW112
DEGAUSS
SW101
SW107
POSITION
SW102
SW106
SW109
SIZE
SW103
SW108
SW104
SW110
MEMORY RECALL
R110
R111
D120

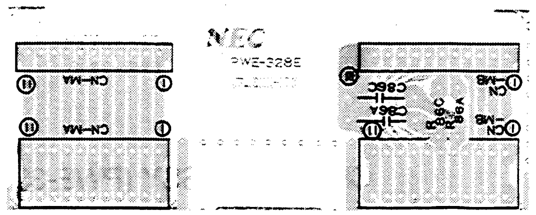
CONTROL PWB ASSY (PWE-328C)
—Solder Side—


D122
D121
CN-BC
GND2
GND1
R124
R123
R121
R120
R122
VR102
BRIGHTNESS
VR101
CONTRAST

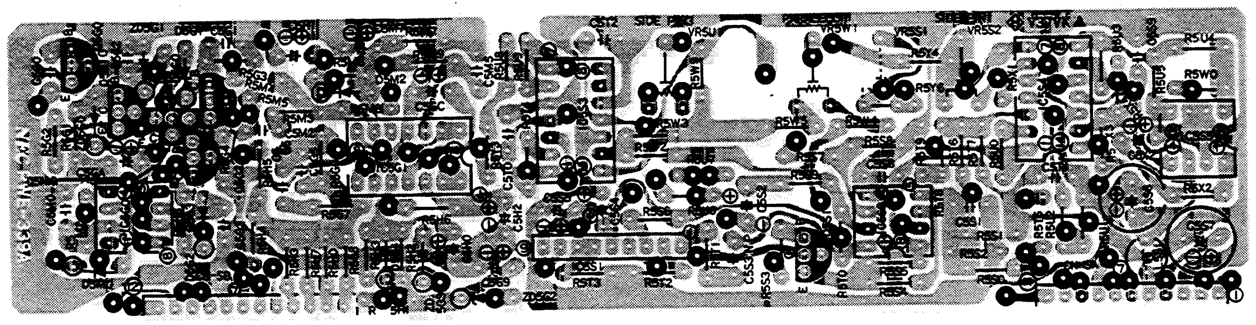
VR PWB ASSY (PWE-328D)
—Solder Side—


CN-G
CN-R
GG
RG
BG
TP901
SG905
SG901
SG902
SG903
SG904
L901
R901
R906
R911
R905
C902
C905
C907
C901
RK
H
HG
BK
G2
GK
GI
R910
R913
R912
D902
CN-E
CN-CE
GND
NEC
1 2 3 4 5 6
7 8 9 10 11 12

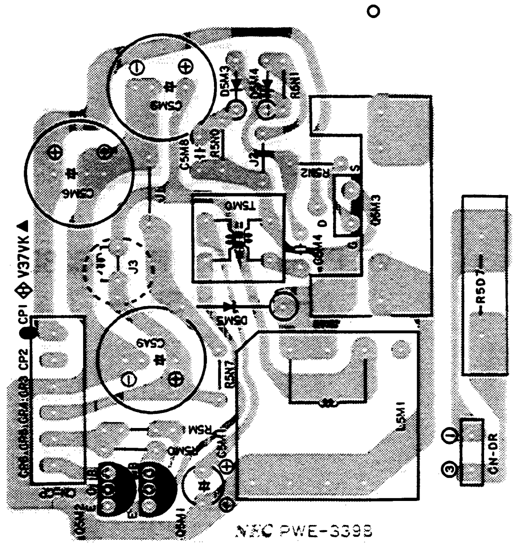
CRT PWB (PWE-328B)
—Solder Side—


NEC
PWE-328E
CN-MA
CN-MB

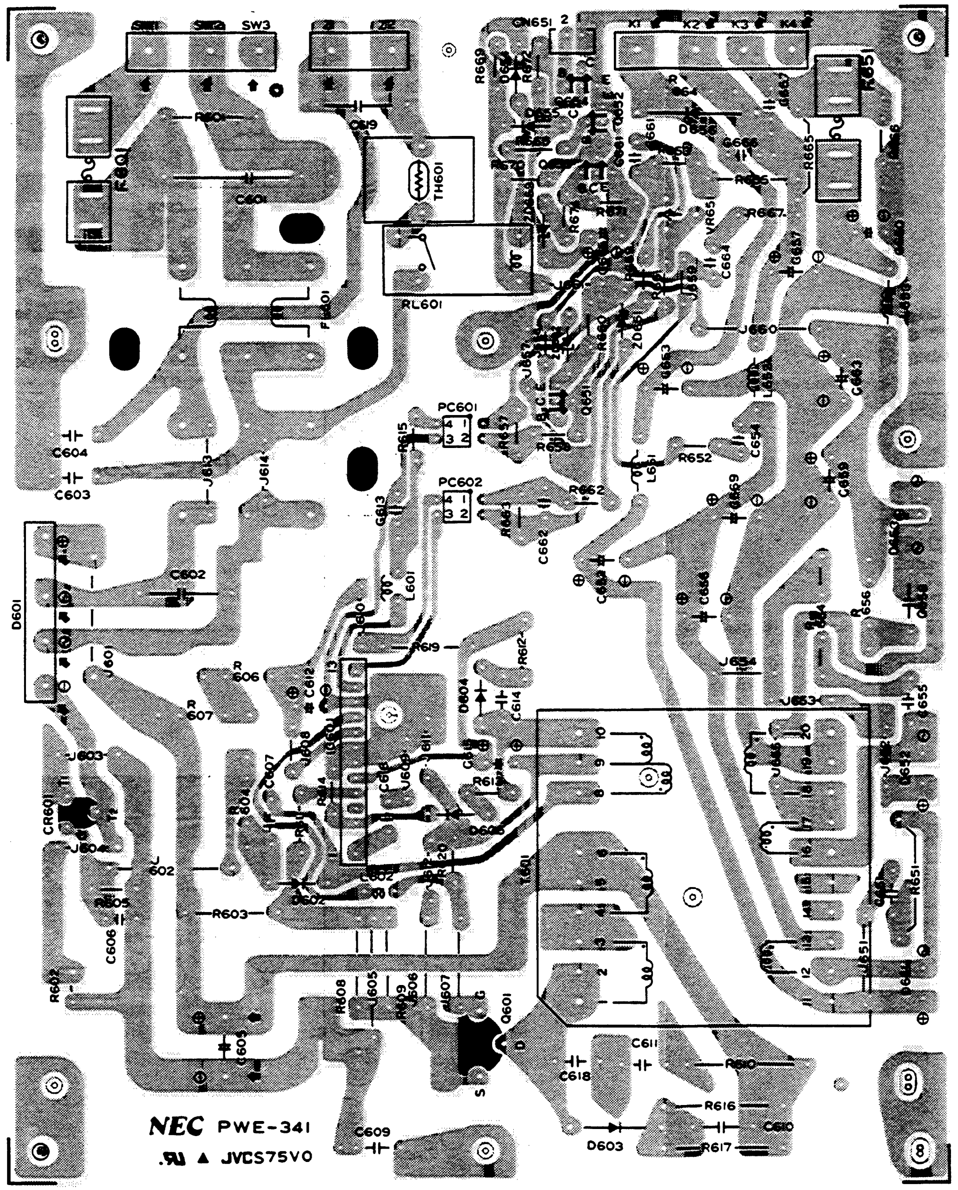
CN PWB ASSY (PWE-328E)
—Solder Side—



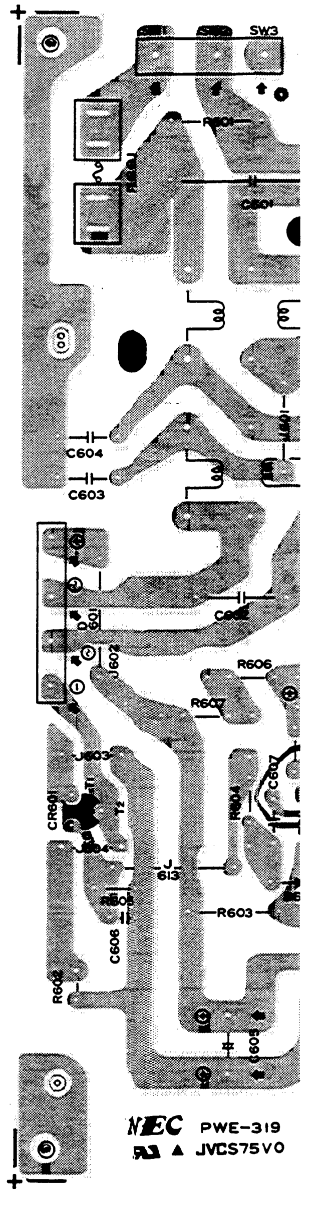
SDP PWB ASSY (PWE-339A)
—Solder Side—


NEC PWE-339B
V37VK ▲
CSA6
CSA8
CSA9
LSM1
R507

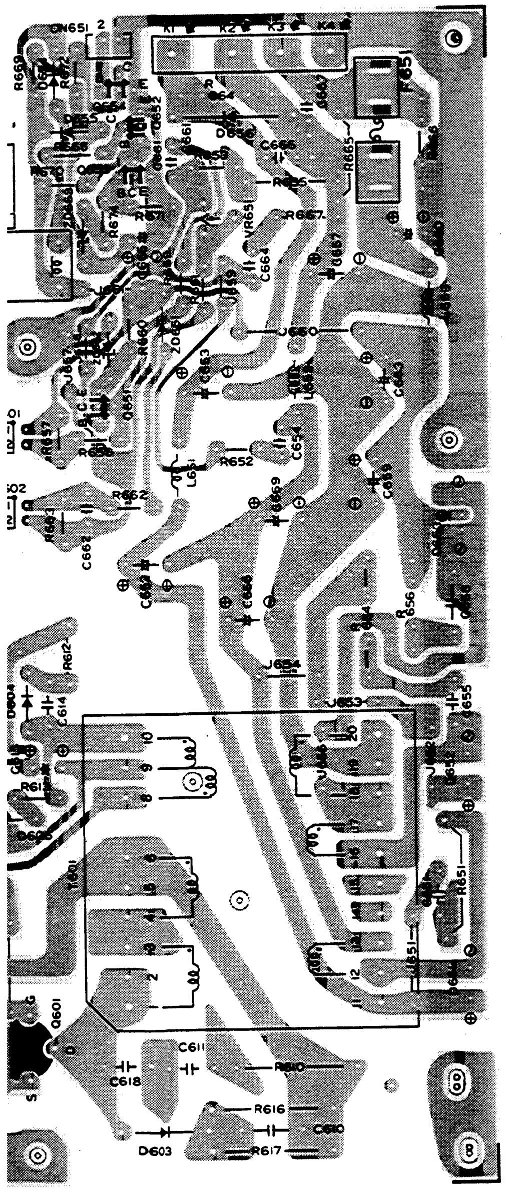
CHP PWB ASSY (PWE-339B)
—Solder Side—


NEC PWE-341
▲ JVCS75V0
SW3
CN651
TH601
RL601
PC601
PC602
C601
C602
C603
C604
D601
D603
Q601
CR601
R601
R603
R610
R616
R617
C609
C611
C618
C610

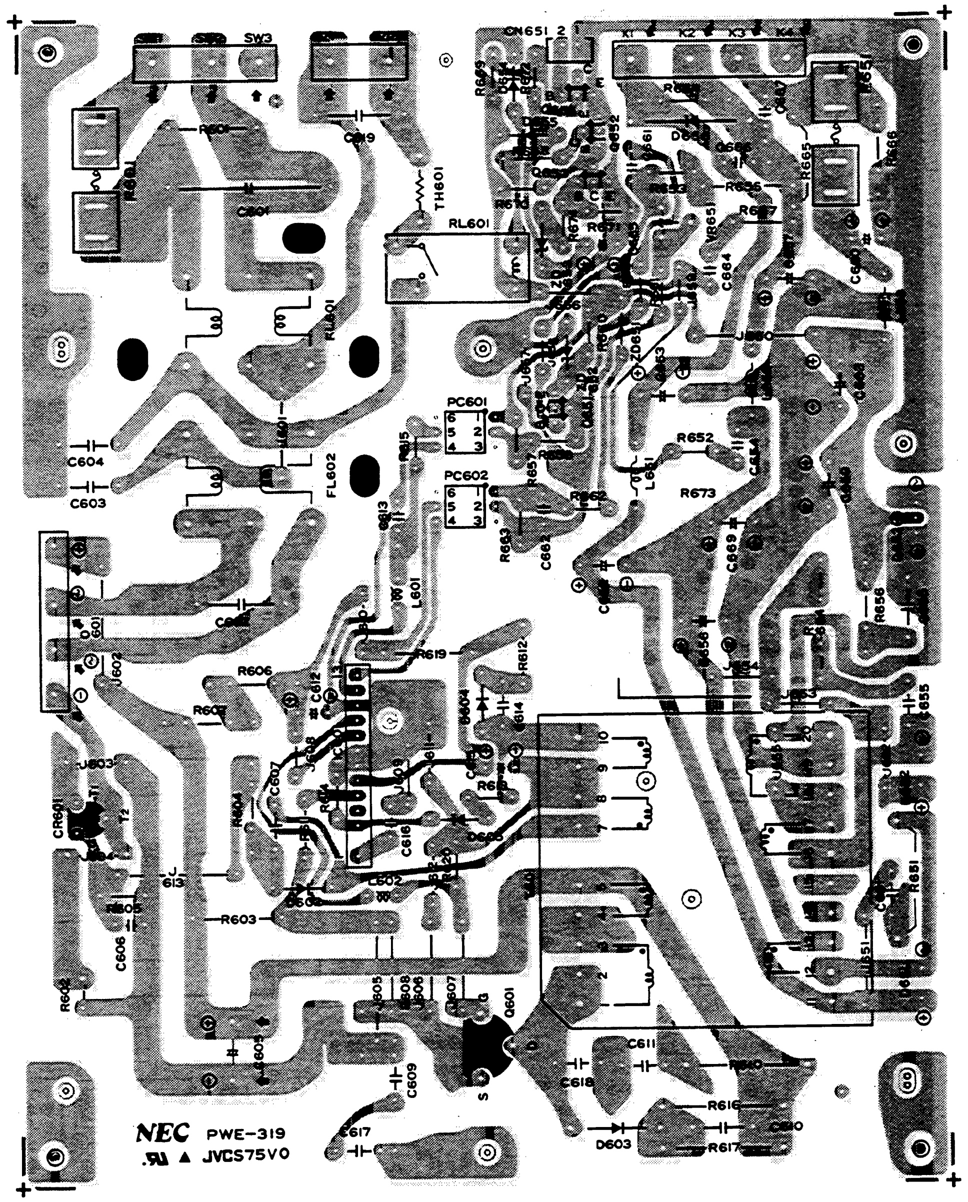
SW REG PWB ASSY (PWE-341)
—Solder Side—


NEC PWE-319
▲ JVCS75V0
SW3
C601
C603
C604

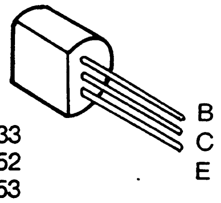
SW


CN651
K1
K2
K3
K4
R665
R667
J660
R652
C654
C659
J654
J653
Q601
C611
C618
R610
R616
D603
R617
C610

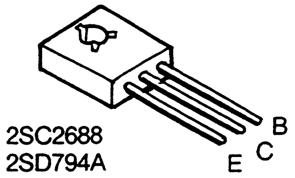
B ASSY (PWE-341)
lder Side—


+
SW3
R601
C601
C619
TH601
RL601
PC601
PC602
C604
C603
FL602
R615
R613
L601
R652
R673
C602
R606
R607
R619
R612
J602
J603
CR601
R605
R603
C606
R602
C605
C607
C609
Q601
C611
C618
R610
R616
D603
R617
C610
C617
NEC PWE-319
JVC575V0

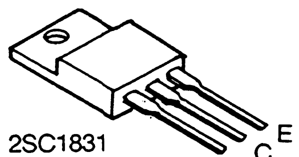
SW REG PWB ASSY (PWE-319)
—Solder Side—



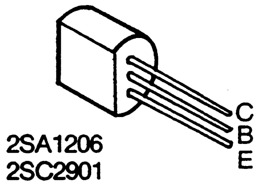
2SA933
2SA952
2SA953
2SA1018
2SA1767
2SC1473
2SC1841



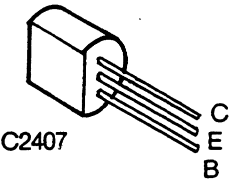
2SC2688
2SD794A
2SD882



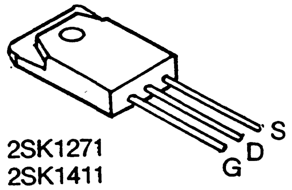
2SC1831
2SC3675
2SC4572
2SD401A
2SD546A



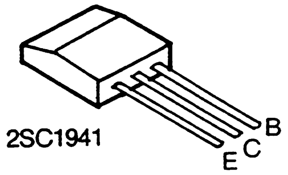
2SA1206
2SC2901
2SC3811



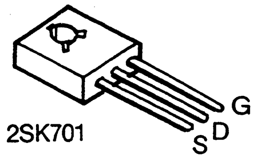
2SC2407



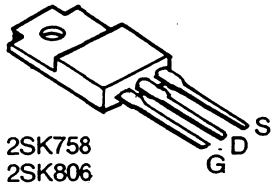
2SK1271
2SK1411



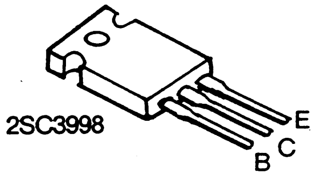
2SC1941



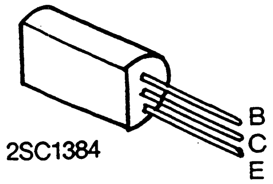
2SK701



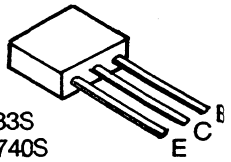
2SK758
2SK806



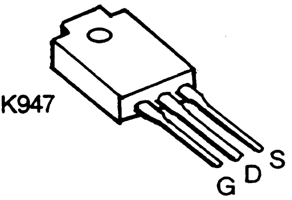
2SC3998



2SC1384

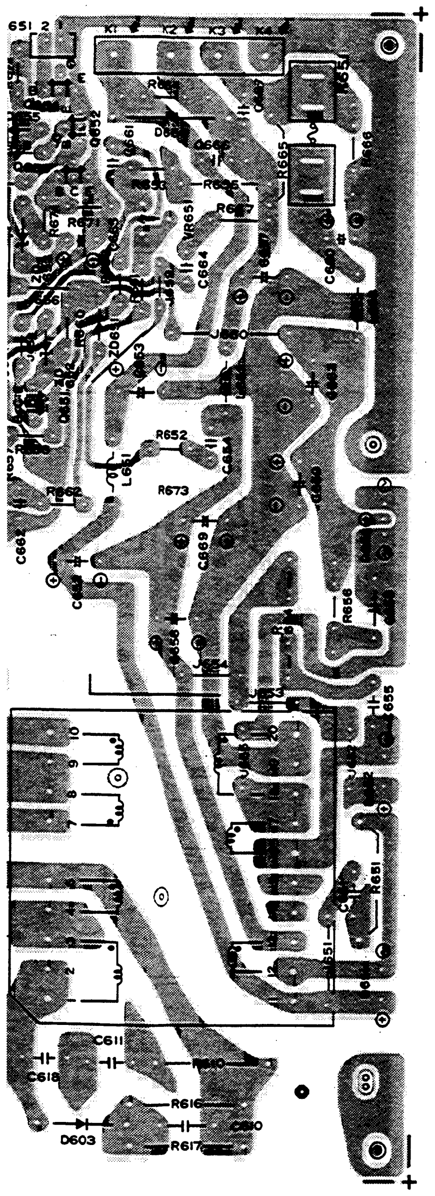


2SA933S
2SC1740S
DTA114ES
DTA143ES
DTA144ES
DTC114ES
DTC114YS
DTC115ES
DTC123ES
DTC143ES
DTC144ES

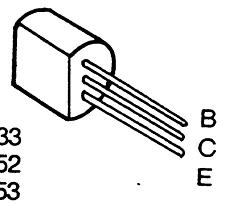


2SK947

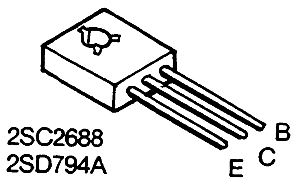
E: EMITTER
B: BASE
C: COLLECTO
G: GATE
D: DRAIN
S: SOURCE



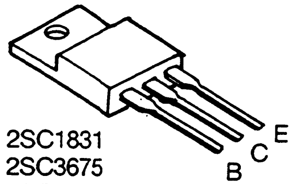
(PWE-319)



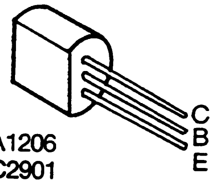
2SA933
2SA952
2SA953
2SA1018
2SA1767
2SC1473
2SC1841



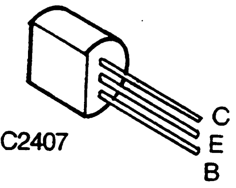
2SC2688
2SD794A
2SD882



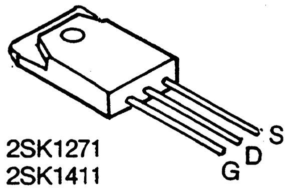
2SC1831
2SC3675
2SC4572
2SD401A
2SD546A



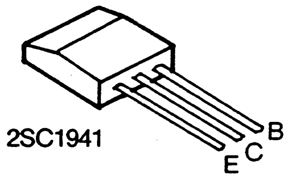
2SA1206
2SC2901
2SC3811



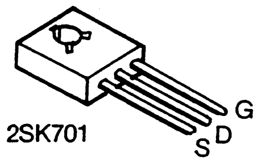
2SC2407



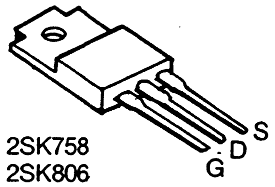
2SK1271
2SK1411



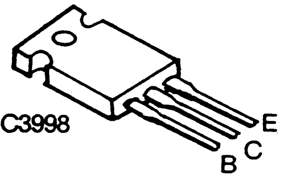
2SC1941



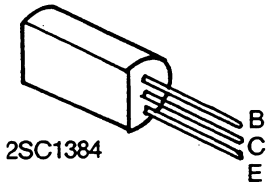
2SK701



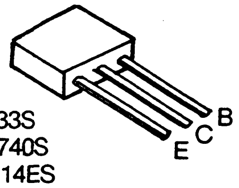
2SK758
2SK806



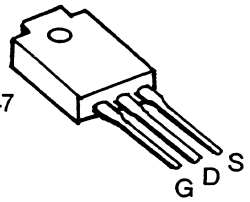
2SC3998



2SC1384



2SA933S
2SC1740S
DTA114ES
DTA143ES
DTA144ES
DTC114ES
DTC114YS
DTC115ES
DTC123ES
DTC143ES
DTC144ES

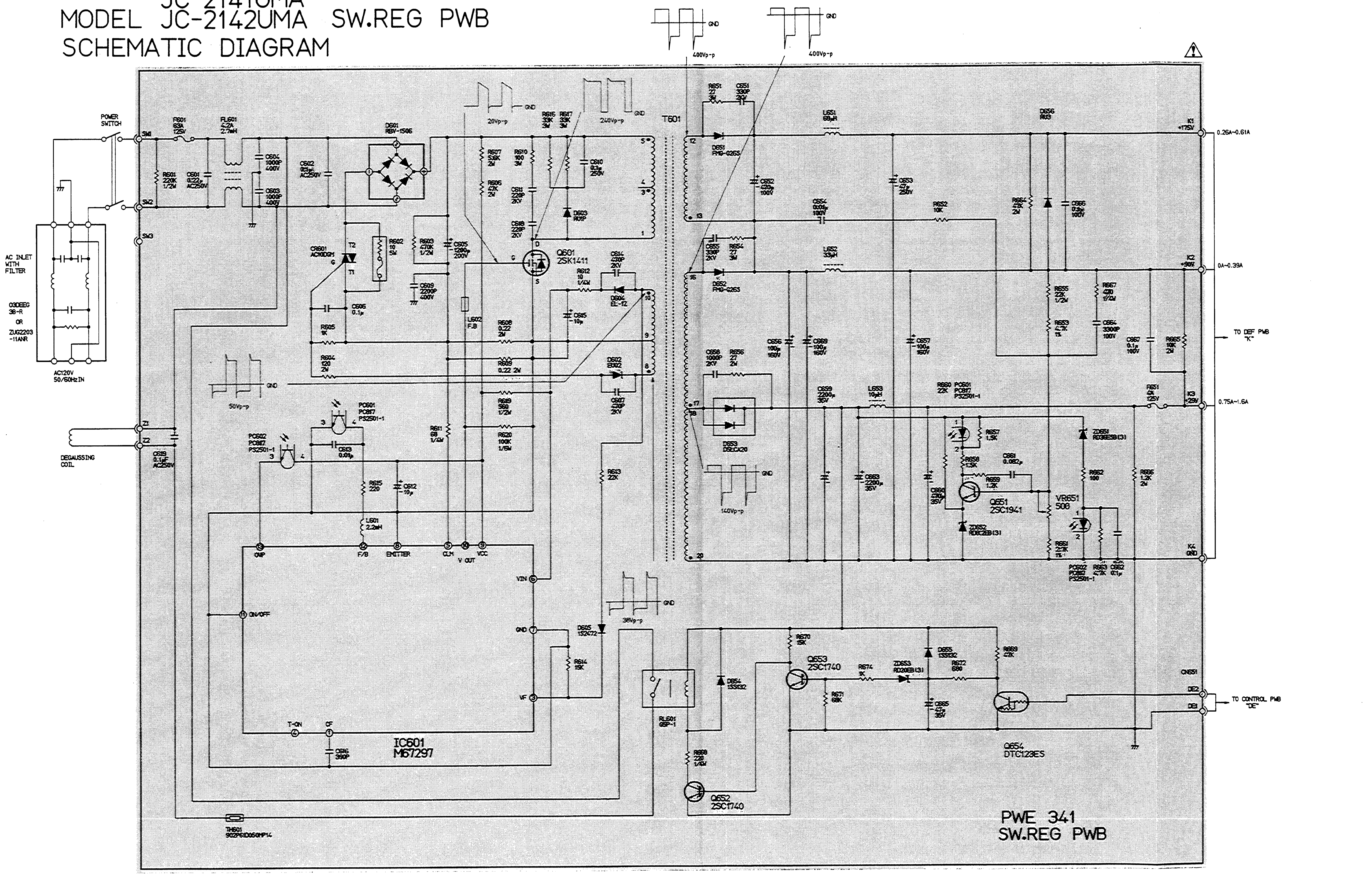


2SK947

E: EMITTER
B: BASE
C: COLLECTOR
G: GATE
D: DRAIN
S: SOURCE

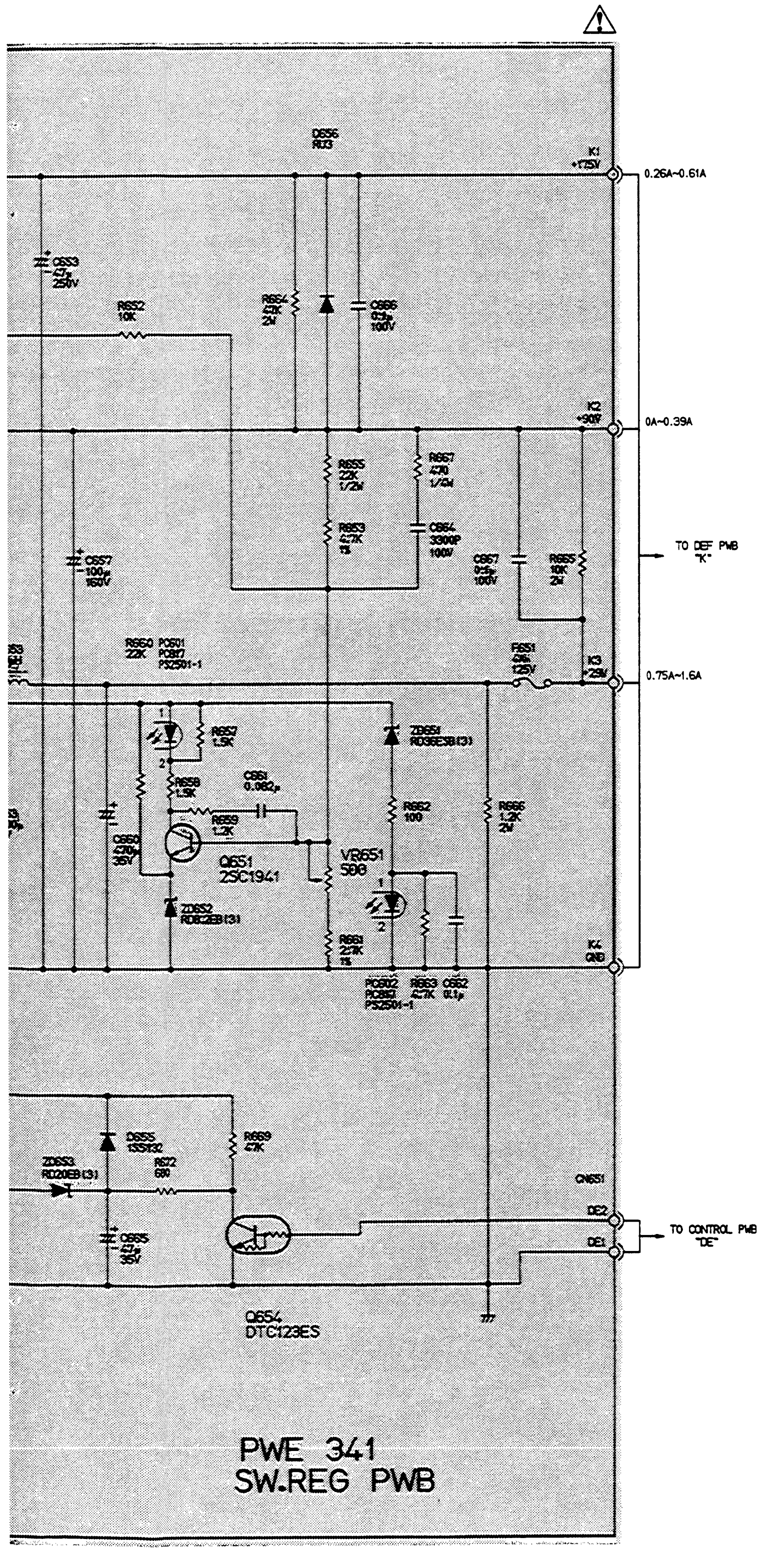
RUN NO.1

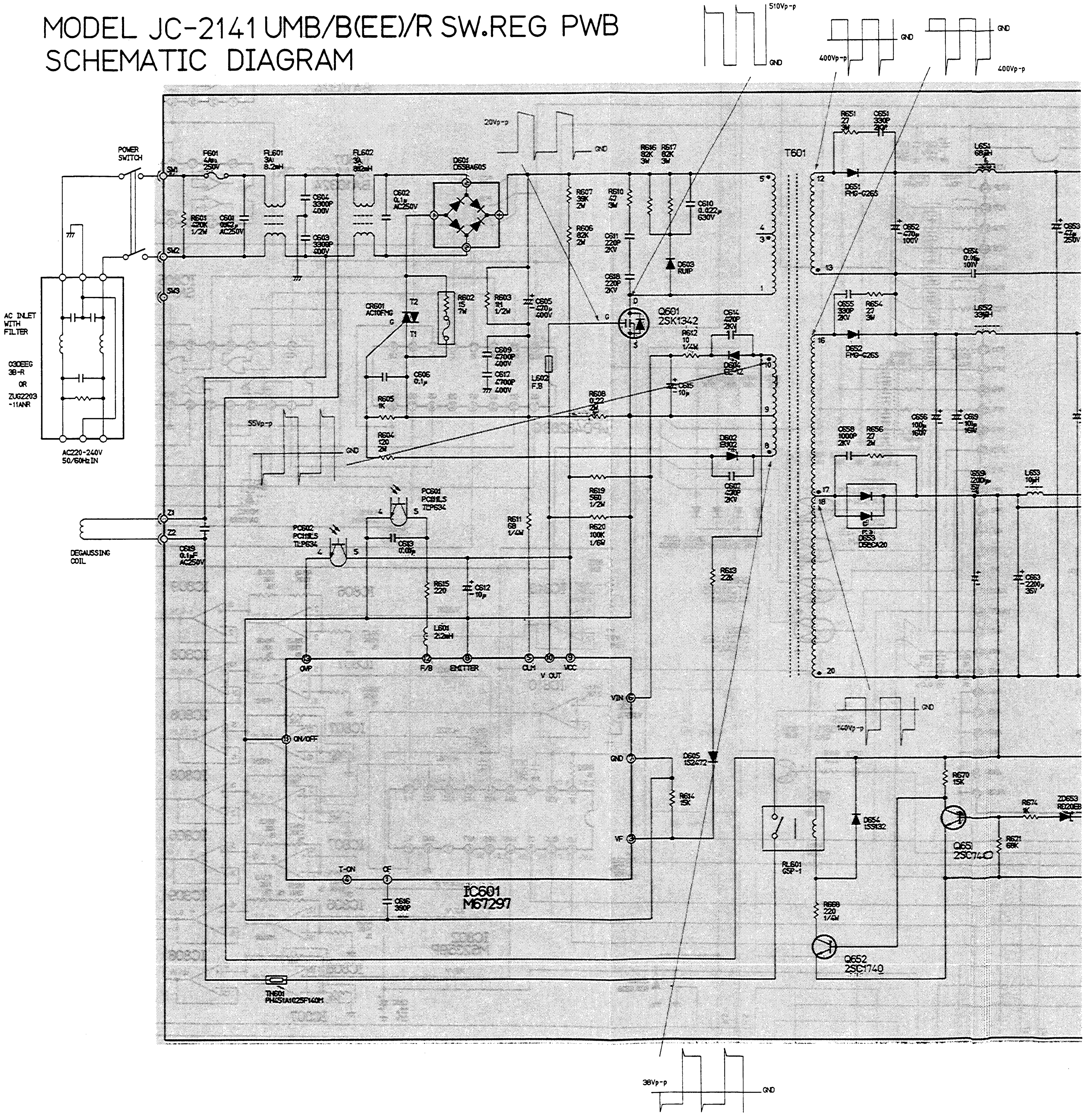
JC-2141UMA
MODEL JC-2142UMA SW.REG PWB
SCHEMATIC DIAGRAM


POWER SWITCH
SW1
SW2
SW3
AC INLET WITH FILTER
03DEEG 3B-R
OR
ZUG2203 -11ANR
AC120V 50/60Hz IN
F601 6.3A 125V
FL601 4.2A 2.7mH
R601 220K 1/2W
C601 0.22μ AC250V
C604 1000P 400V
C603 1000P 400V
C602 0.1μ AC250V
D601 RBV-1506
CR601 AC10DGM
T2
T1
G
R602 10 5W
R603 470K 1/2W
C605 1200μ 200V
C609 2200P 400V
C606 0.1μ
R605 1K
R604 120 2W
50Vp-p
GND
DEGAUSSING COIL
Z1
Z2
C619 0.1μF AC250V
PC601 PC817 PS2501-1
PC602 PC817 PS2501-1
C613 0.01μ
R615 220
C612 10μ
L601 2.2mH
20Vp-p
240Vp-p
R616 33K 3W
R617 33K 3W
R607 5.6K 2W
R610 100 3W
C610 0.1μ 250V
R606 47K 2W
C611 220P 2KV
C618 220P 2KV
D603 RU1P
Q601 2SK1411
D
G
S
C614 470P 2KV
R612 10 1/4W
D604 EL-1Z
C615 10μ
L602 F.B
R608 0.22 2W
R609 0.22 2W
D602 EU02
C607 470P 2KV
R619 560 1/2W
R620 100K 1/6W
R611 68 1/4W
R613 22K
T601
400Vp-p
400Vp-p
R651 27 3W
C651 330P 2KV
D651 FMG-G26S
C652 470μ 100V
L651 68μH
C653 47μ 250V
C654 0.01μ 100V
R652 10K
D656 RU3
R664 47K 2W
C666 0.1μ 100V
K1 +175V
0.26A~0.61A
C655 330P 2KV
R654 27 3W
D652 FMG-G26S
L652 33μH
K2 +90V
0A~0.39A
R655 22K 1/2W
R667 430 1/2W
R653 4.7K 1%
C664 3300P 100V
C667 0.1μ 100V
R665 10K 2W
TO DEF PWB "K"
C658 1000P 2KV
R656 27 2W
C656 100μ 160V
C669 100μ 160V
C657 100μ 160V
D653 D5LCA20
C659 2200μ 35V
L653 10μH
R660 22K
PC601 PC817 PS2501-1
F651 4A 125V
K3 +29V
0.75A~1.6A
140Vp-p
C663 2200μ 35V
C660 470μ 35V
R657 1.5K
R658 1.5K
C661 0.082μ
R659 1.2K
Q651 2SC1941
VR651 500
ZD651 RD36ESB(3)
R662 100
R666 1.2K 2W
ZD652 RD8.2EB(3)
R661 2.7K 1%
PC602 PC817 PS2501-1
R663 4.7K
C662 0.1μ
K4 GND
12
13
16
17
18
20
5
4
3
1
10
9
8
OVP
F/B
EMITTER
CLM
V OUT
VCC
VIN
ON/OFF
GND
VF
T-ON
CF
C616 390P
IC601 M67297
36Vp-p
D605 1S2472
R614 15K
RL601 G5P-1
D654 1SS132
R668 220 1/4W
Q652 2SC1740
R670 15K
Q653 2SC1740
R671 68K
R674 1K
ZD653 RD20EB(3)
D655 1SS132
R672 680
C665 47μ 35V
R669 47K
Q654 DTC123ES
CN651
DE2
DE1
TO CONTROL PWB "DE"
TH601 902P61D050MP14
PWE 341 SW.REG PWB

RUN NO.1

MODEL JC-2141 UMB/B(EE)/R SW.REG PWB SCHEMATIC DIAGRAM

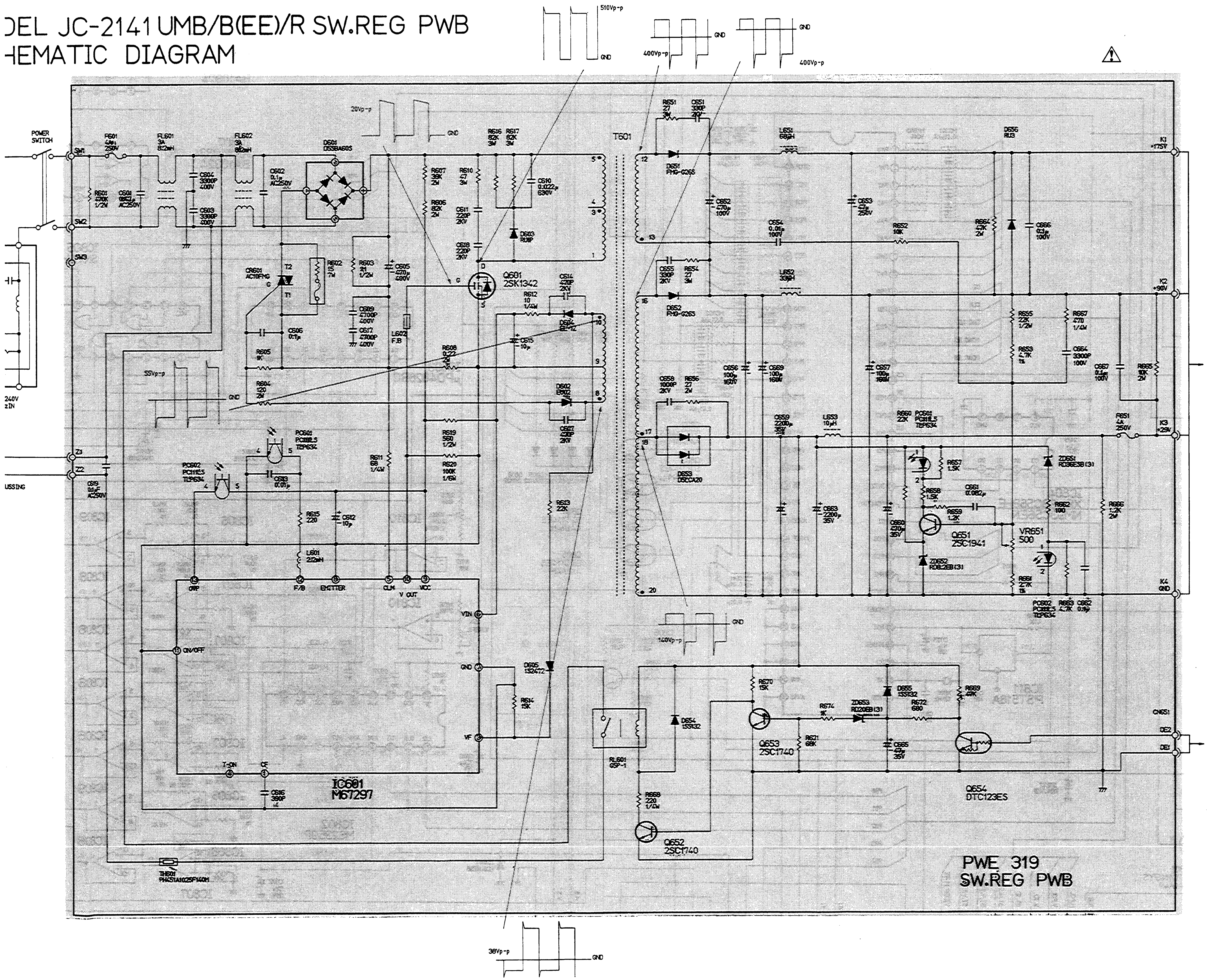

⚠
D656
RU3
K1
+175V
0.26A~0.61A
C653
47μ
250V
R652
10K
R664
47K
2W
C666
0.1μ
100V
K2
+90V
0A~0.39A
R655
22K
1/2W
R667
470
1/4W
R653
4.7K
1%
C664
3300P
100V
C657
100μ
160V
C667
0.1μ
100V
R665
10K
2W
TO DEF PWB
"K"
R660
22K
PC601
PC817
PS2501-1
F651
4A
125V
K3
+25V
0.75A~1.6A
R657
1.5K
ZD651
RD36ESB(3)
R658
1.5K
C661
0.082μ
R659
1.2K
R662
100
R666
1.2K
2W
C660
470μ
35V
Q651
2SC1941
VR651
500
ZD652
RD8.2EB(3)
R661
2.7K
1%
K4
GND
PC602
PC817
PS2501-1
R663
4.7K
C662
0.1μ
D655
1SS132
R669
47K
ZD653
RD20EB(3)
R672
680
C665
47μ
35V
CN651
DE2
DE1
TO CONTROL PWB
"DE"
Q654
DTC123ES
PWE 341
SW.REG PWB


510Vp-p
GND
400Vp-p
GND
GND
400Vp-p
20Vp-p
GND
POWER SWITCH
SW1
SW2
SW3
F601
4A
250V
FL601
3A
8.2mH
FL602
3A
8.2mH
D601
D5SBA60S
C604
3300P
400V
C603
3300P
400V
C602
0.1μ
AC250V
R601
470K
1/2W
C601
0.82μ
AC250V
AC INLET WITH FILTER
03DEEG
3B-R
OR
ZUG2203
-11ANR
AC220-240V
50/60Hz IN
CR601
AC10FMG
T2
T1
G
R602
15
7W
R603
1M
1/2W
C605
470μ
400V
C606
0.1μ
C609
4700P
400V
C617
4700P
400V
L602
F.B
R605
1K
R604
120
2W
55Vp-p
GND
R607
39K
2W
R606
82K
2W
R610
47
3W
C611
220P
2KV
C618
220P
2KV
R616
82K
3W
R617
82K
3W
C610
0.022μ
630V
D603
RU1P
Q601
2SK1342
D
G
S
C614
470P
2KV
R612
10
1/4W
D604
EG-1Z
C615
10μ
R608
0.22
2W
D602
EU02
C613
470P
2KV
R619
560
1/2W
R620
100K
1/6W
R611
68
1/4W
R613
22K
T601
5
4
3
1
10
9
8
12
13
16
17
18
20
R651
27
3W
C651
330P
2KV
D651
FMG-G26S
L654
68μH
C652
470μ
100V
C654
0.1μ
100V
C653
47μ
250V
C655
330P
2KV
R654
27
3W
D652
FMG-G26S
L652
33μH
C656
100μ
160V
C659
100μ
16V
C658
1000P
2KV
R656
27
2W
C659
2200μ
35V
L653
10μH
D653
D5SCA20
C663
2200μ
35V
Z1
Z2
DEGAUSSING COIL
C619
0.1μF
AC250V
PC601
PC111L5
TLP634
PC602
PC111L5
TLP634
4
5
C613
0.01μ
R615
220
C612
10μ
L601
2.2mH
OVP
F/B
EMITTER
CLM
V OUT
VCC
VIN
ON/OFF
GND
VF
T-ON
CF
C616
390P
IC601
M67297
D605
1S2472
R614
15K
140Vp-p
GND
RL601
G5P-1
D654
1SS132
R670
15K
R674
1K
ZD653
RD20EB
R671
68K
Q651
2SC1740
R668
220
1/4W
Q652
2SC1740
TH601
PH451A1025F140M
38Vp-p
GND

DEL JC-2141 UMB/B(EE)/R SW.REG PWB
HEMATIC DIAGRAM

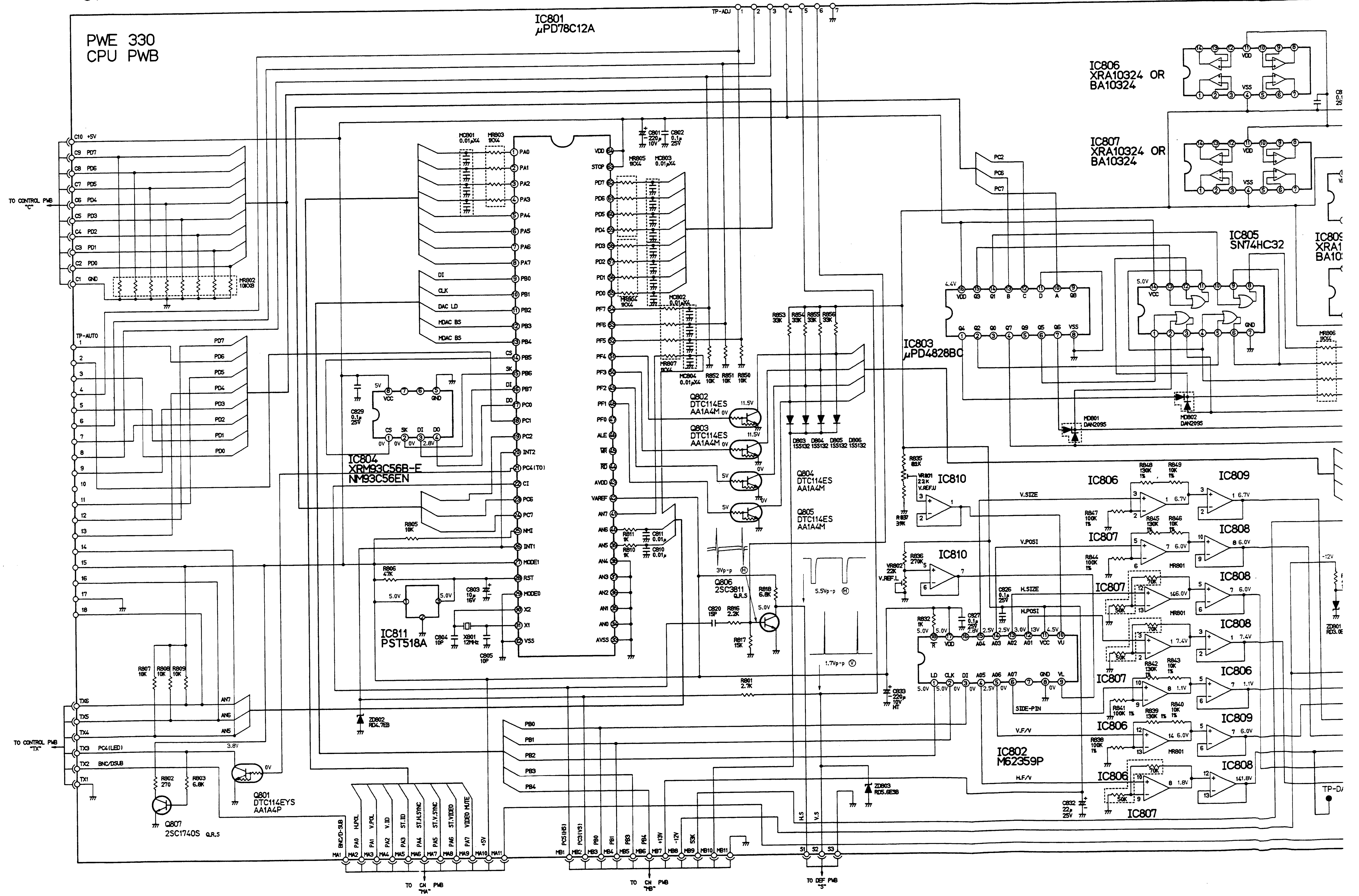
RUN NO.1

⚠

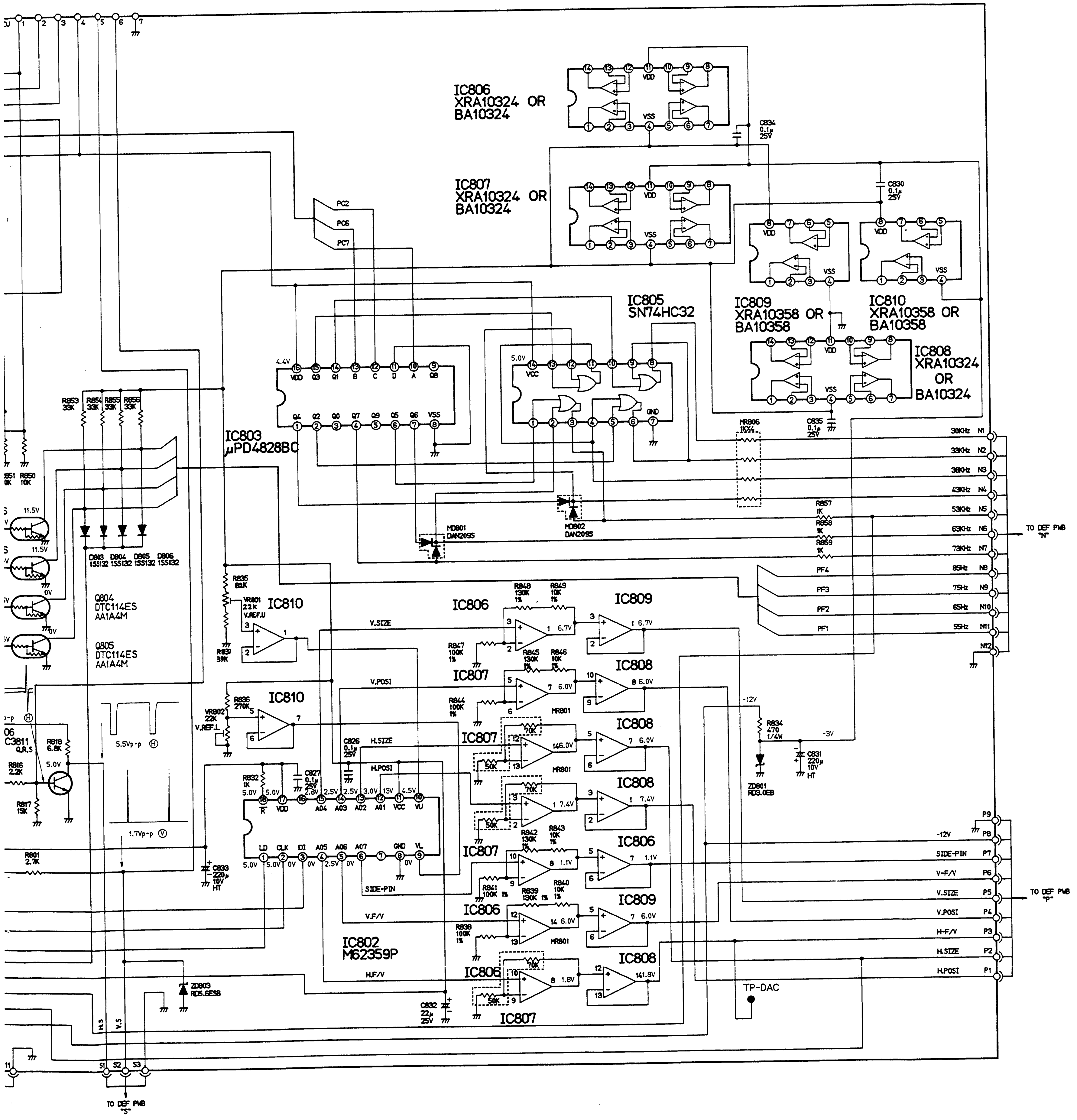

510Vp-p
GND
400Vp-p
20Vp-p
55Vp-p
140Vp-p
36Vp-p
POWER SWITCH
SW1
SW2
SW3
F601
FL601
FL602
D601
D5SBA60S
T601
Q601
2SK1342
IC601
M67297
OVP
F/B
EMITTER
CLM
V OUT
VCC
VIN
ON/OFF
GND
VF
T-ON
CF
PC601
PC602
CR601
RL601
Q651
2SC1941
Q652
2SC1740
Q653
2SC1740
Q654
DTC123ES
VR651
500
ZD651
ZD652
ZD653
TH601
K1
+175V
K2
+90V
K3
+25V
K4
GND
TO DEF PWB "K"
CN651
TO CONTROL PWB "DE"
240V
PWE 319
SW.REG PWB

78164401

MODEL JC-2141UMA/B/B(EE)/R, JC-2142UMA
CPU PWB SCHEMATIC DIAGRAM

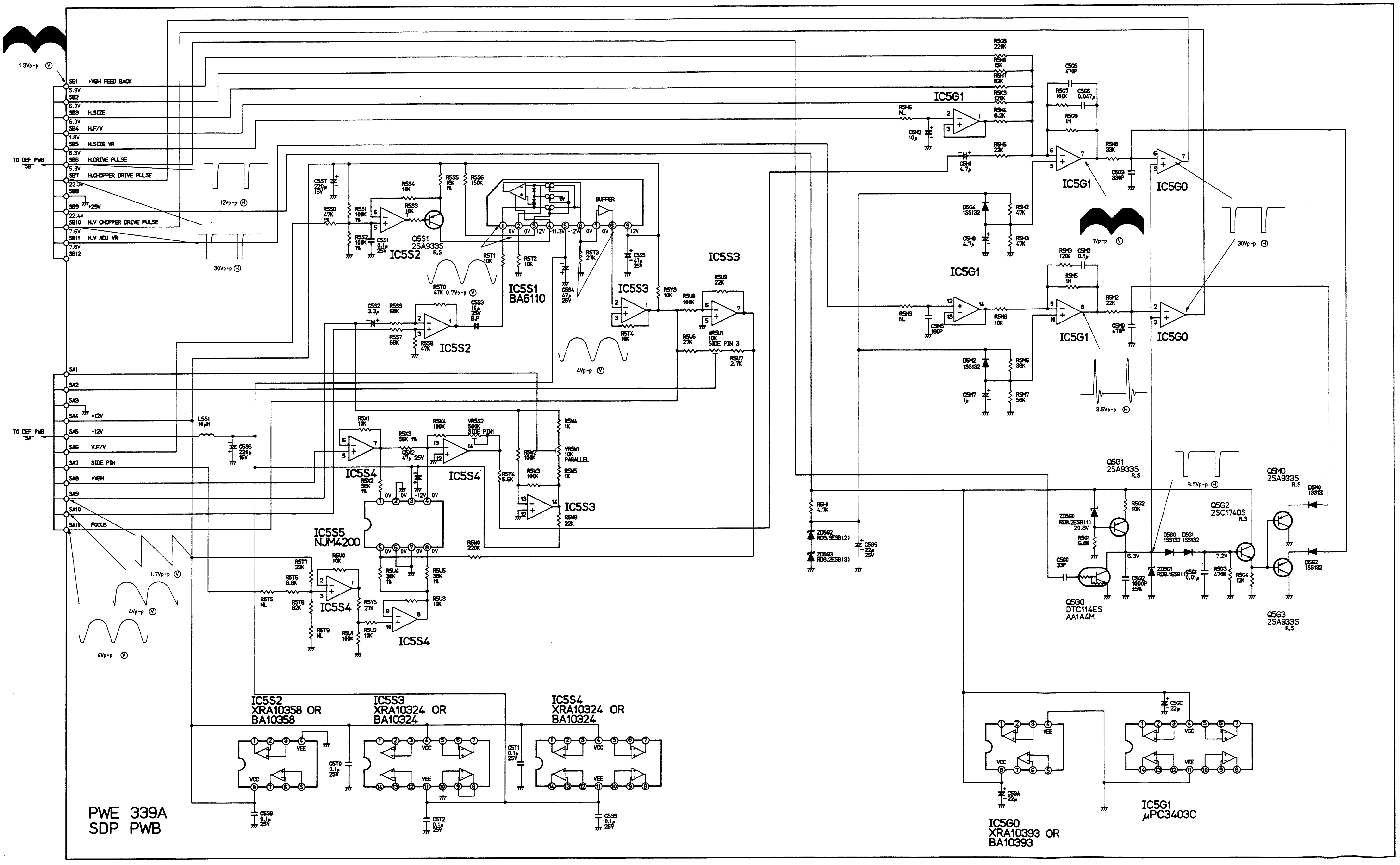

PWE 330
CPU PWB
IC801
μPD78C12A
TP-ADJ
IC806
XRA10324 OR
BA10324
IC807
XRA10324 OR
BA10324
IC805
SN74HC32
IC803
μPD4828BC
IC804
XRM93C56B-E
NM93C56EN
IC811
PST518A
IC810
IC802
M62359P
IC806
IC807
IC808
IC809
Q802
DTC114ES
AA1A4M
Q803
DTC114ES
AA1A4M
Q804
DTC114ES
AA1A4M
Q805
DTC114ES
AA1A4M
Q806
2SC3811
Q801
DTC114EYS
AA1A4P
Q807
2SC1740S
TO CONTROL PWB "C"
TO CONTROL PWB "TX"
TP-AUTO
MR802
10KX8
MC801
0.01μX4
MR803
11KX4
X801
12MHz
ZD802
RD4.7EB
ZD803
RD5.6ESB
MD801
DAN209S
MD802
DAN209S
D803 D804 D805 D806
1SS132
V.SIZE
V.POSI
H.SIZE
H.POSI
SIDE-PIN
V.F/V
H.F/V
5.5Vp-p
1.7Vp-p
3Vp-p
TO CN PWB "MA"
TO CN PWB "MB"
TO DEF PWB "S"
BNC/D-SUB
H.POL
V.POL
V.ID
ST.ID
ST.H.SYNC
ST.V.SYNC
ST.VIDEO
VIDEO MUTE
TP-D

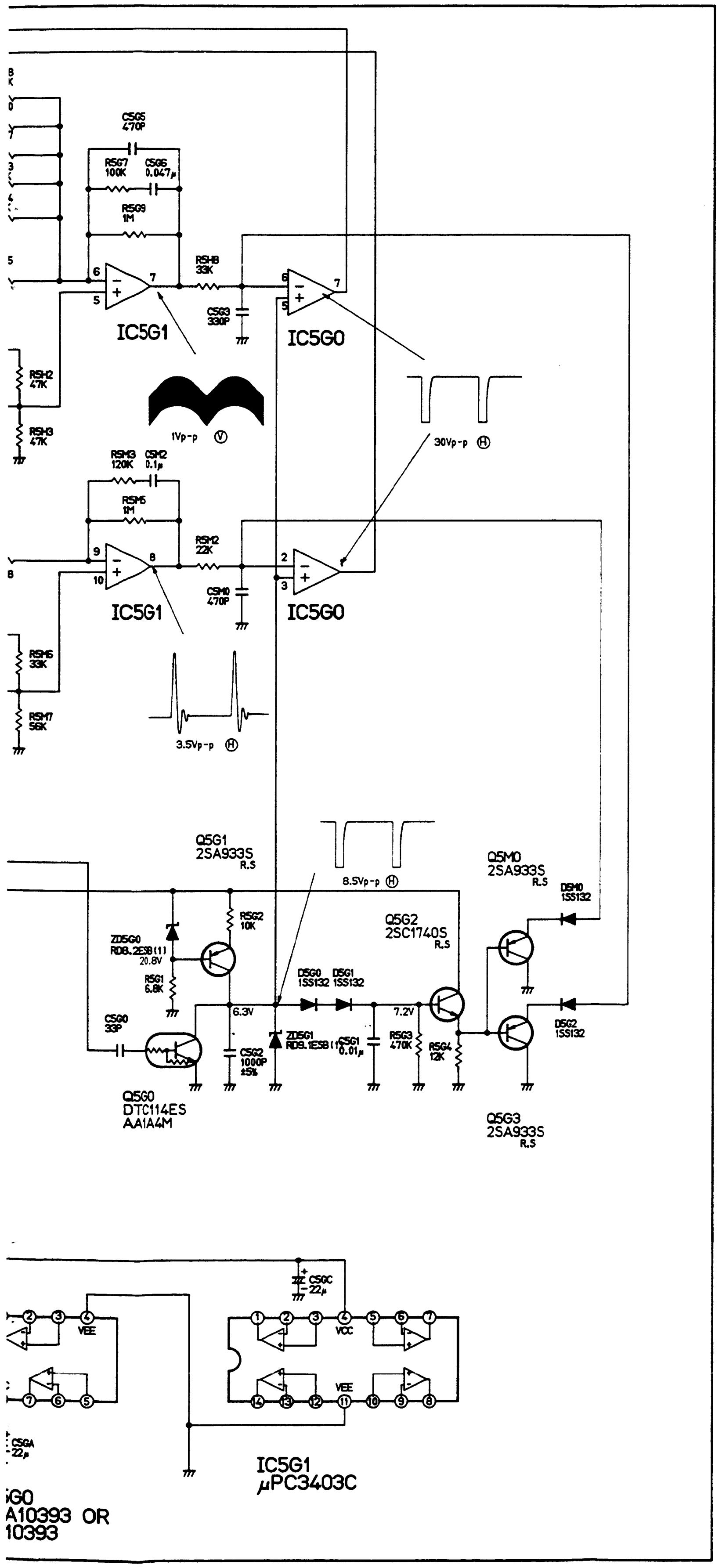
RUN NO.1

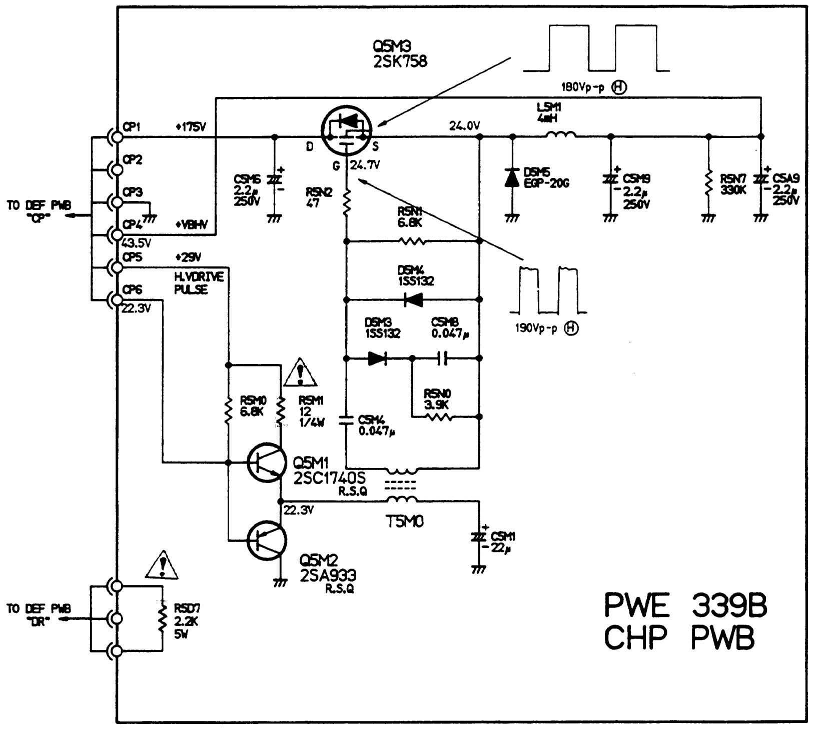

IC806
XRA10324 OR
BA10324
IC807
XRA10324 OR
BA10324
IC805
SN74HC32
IC809
XRA10358 OR
BA10358
IC810
XRA10358 OR
BA10358
IC808
XRA10324
OR
BA10324
IC803
µPD4828BC
IC802
M62359P
PC2
PC6
PC7
C834 0.1µ 25V
C830 0.1µ 25V
C835 0.1µ 25V
MR806
MD801 DAN209S
MD802 DAN209S
R853 33K
R854 33K
R855 33K
R856 33K
D803 1SS132
D804 1SS132
D805 1SS132
D806 1SS132
Q804 DTC114ES AA1A4M
Q805 DTC114ES AA1A4M
R835 82K
VR801 22K V.REF.U
R837 39K
R836 270K
VR802 22K V.REF.L
R857 1K
R858 1K
R859 1K
R834 470 1/4W
ZD801 RD3.0EB
C831 220µ 10V HT
C826 0.1µ 25V
C827 0.1µ 25V
C833 220µ 10V HT
C832 22µ 25V
ZD803 RD5.6ESB
R848 130K 1%
R849 10K 1%
R847 100K 1%
R845 130K 1%
R846 10K 1%
R844 100K 1%
R842 130K 1%
R843 10K 1%
R841 100K 1%
R839 130K 1%
R840 10K 1%
R838 100K 1%
MR801
V.SIZE
V.POSI
H.SIZE
H.POSI
SIDE-PIN
V.F/V
H.F/V
-12V
-3V
TP-DAC
30KHz N1
33KHz N2
38KHz N3
43KHz N4
53KHz N5
63KHz N6
73KHz N7
85Hz N8
75Hz N9
65Hz N10
55Hz N11
N12
PF4
PF3
PF2
PF1
TO DEF PWB "N"
P9
-12V P8
SIDE-PIN P7
V-F/V P6
V.SIZE P5
V.POSI P4
H-F/V P3
H.SIZE P2
H.POSI P1
TO DEF PWB "P"
S1
S2
S3
TO DEF PWB "S"
5.5Vp-p
1.7Vp-p
R818 6.8K
R816 2.2K
R817 15K
R801 2.7K
R851 10K
R850 10K
C3811 Q.R.S
11.5V
R832 1K

78164401

MODEL JC-2141UMA/B/B(EE)/R, JC-2142UMA
SDP PWB SCHEMATIC DIAGRAM


1.3Vp-p Ⓥ
SB1 +VBH FEED BACK
SB2
SB3 H.SIZE
SB4 H.F/V
SB5 H.SIZE VR
SB6 H.DRIVE PULSE
SB7 H.CHOPPER DRIVE PULSE
SB8
SB9 +29V
SB10 H.V CHOPPER DRIVE PULSE
SB11 H.V ADJ VR
SB12
TO DEF PWB "SB"
12Vp-p Ⓗ
30Vp-p Ⓗ
SA1
SA2
SA3
SA4 +12V
SA5 -12V
SA6 V.F/V
SA7 SIDE PIN
SA8 +VBH
SA9
SA10
SA11 FOCUS
TO DEF PWB "SA"
L5S1 10μH
C5S6 220μ 16V
IC5S1 BA6110
BUFFER
Q5S1 2SA933S R.S
IC5S2
IC5S3
IC5S4
IC5S5 NJM4200
VR5S2 500K SIDE PIN1
VR5W1 10K PARALLEL
VR5U1 10K SIDE PIN 3
0.7Vp-p Ⓥ
4Vp-p Ⓥ
1.7Vp-p Ⓥ
IC5G1
IC5G0
1Vp-p Ⓥ
30Vp-p Ⓗ
3.5Vp-p Ⓗ
8.5Vp-p Ⓗ
Q5G1 2SA933S R.S
Q5G2 2SC1740S R.S
Q5G0 DTC114ES AA1A4M
Q5M0 2SA933S R.S
Q5G3 2SA933S R.S
ZD5G0 RD8.2ESB(1) 20.8V
ZD5G1 RD9.1ESB(1)
ZD5G2 RD3.9ESB(2)
ZD5G3 RD8.2ESB(3)
D5G0 1SS132
D5G1 1SS132
D5G2 1SS132
D5M0 1SS132
D5G4 1SS132
D5M2 1SS132
6.3V
7.2V
IC5S2 XRA10358 OR BA10358
IC5S3 XRA10324 OR BA10324
IC5S4 XRA10324 OR BA10324
IC5G0 XRA10393 OR BA10393
IC5G1 μPC3403C
VCC
VEE
PWE 339A
SDP PWB
TO

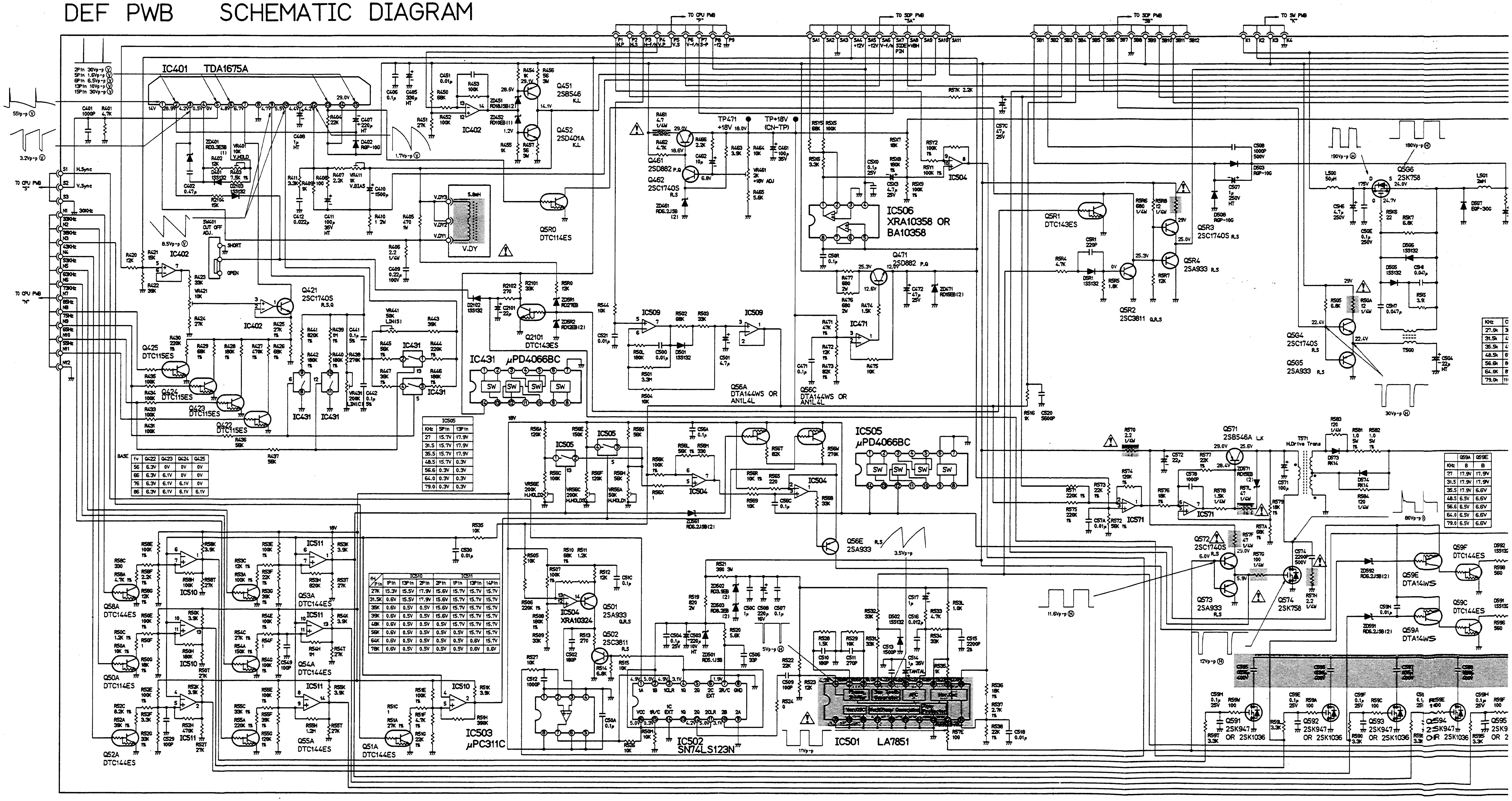

C5G5
470P
R5G7
100K
C5G6
0.047μ
R5G9
1M
R5H8
33K
C5G3
330P
IC5G1
IC5G0
R5H2
47K
R5H3
47K
1Vp-p Ⓥ
30Vp-p Ⓗ
R5M3
120K
C5M2
0.1μ
R5M5
1M
R5M2
22K
C5M0
470P
IC5G1
IC5G0
R5M6
33K
R5M7
56K
3.5Vp-p Ⓗ
Q5G1
2SA933S
R.S
8.5Vp-p Ⓗ
Q5M0
2SA933S
R.S
D5M0
1SS132
ZD5G0
RD8.2ESB(1)
20.8V
R5G2
10K
R5G1
6.8K
Q5G2
2SC1740S
R.S
D5G0
1SS132
D5G1
1SS132
C5G0
33P
6.3V
7.2V
ZD5G1
RD9.1ESB(1)
C5G1
0.01μ
C5G2
1000P
±5%
R5G3
470K
R5G4
12K
D5G2
1SS132
Q5G0
DTC114ES
AA1A4M
Q5G3
2SA933S
R.S
C5GC
22μ
VEE
VCC
VEE
C5GA
22μ
IC5G1
μPC3403C
A10393 OR
10393


Q5M3
2SK758
180Vp-p Ⓗ
CP1
+175V
D
S
G
24.7V
24.0V
L5M1
4mH
CP2
CP3
CP4
43.5V
+VBHV
CP5
+29V
CP6
22.3V
H.VDRIVE
PULSE
TO DEF PWB
"CP"
C5M6
2.2μ
250V
R5N2
47
R5N1
6.8K
D5M4
1SS132
D5M3
1SS132
C5M8
0.047μ
D5M5
EGP-20G
C5M9
2.2μ
250V
R5N7
330K
C5A9
2.2μ
250V
190Vp-p Ⓗ
R5M0
6.8K
R5M1
12
1/4W
C5M4
0.047μ
R5N0
3.9K
Q5M1
2SC1740S
R.S.Q
22.3V
T5M0
C5M1
22μ
Q5M2
2SA933
R.S.Q
TO DEF PWB
"DR"
R5D7
2.2K
5W
PWE 339B
CHP PWB

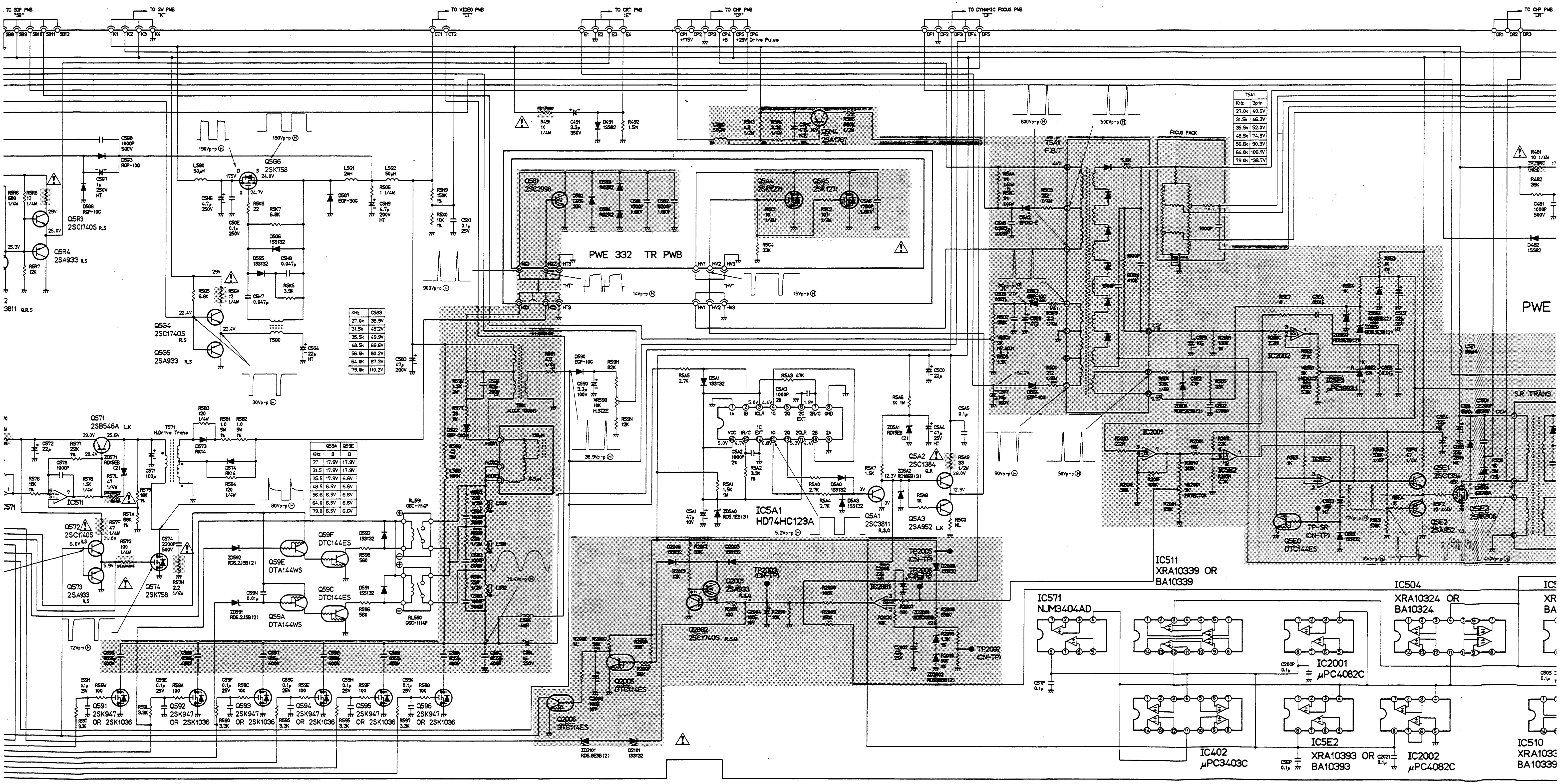
RUN NO.1

78164421

MODEL JC-2141UMA/B/B(EE)/R, JC-2142UMA
DEF PWB SCHEMATIC DIAGRAM



TO CPU PWB "P"
TO SDP PWB "SA"
TO SDP PWB "SB"
TO SW PWB "K"
IC401 TDA1675A
IC402
Q451 2SB546
Q452 2SD401A
Q5R0 DTC114ES
V.DY
TP471 +18V
TP+18V (CN-TP)
Q461 2SD882
Q462 2SC1740S
IC506 XRA10358 OR BA10358
Q471 2SD882
IC504
Q5R1 DTC143ES
Q5R2 2SC3811
Q5R3 2SC1740S
Q5R4 2SA933
Q5G6 2SK758
Q5G4 2SC1740S
Q5G5 2SA933
Q421 2SC1740S
Q425 DTC115ES
Q424 DTC115ES
Q423 DTC115ES
Q422 DTC115ES
IC431 μPD4066BC
Q2101 DTC143ES
IC509
IC471
Q56A DTA144WS OR AN1L4L
Q56C DTA144WS OR AN1L4L
IC505 μPD4066BC
Q56E 2SA933
Q571 2SB546A
IC571
Q572 2SC1740S
Q573 2SA933
Q574 2SK758
T571 H.Drive Trans
Q59F DTC144ES
Q59E DTA14WS
Q59C DTC144ES
Q59A DTA14WS
IC510
IC511
Q58A DTC144ES
Q50A DTC114ES
Q52A DTC144ES
Q53A DTC144ES
Q54A DTC144ES
Q55A DTC144ES
Q51A DTC144ES
IC503 μPC311C
IC504 XRA10324
Q501 2SA933
Q502 2SC3811
IC502 SN74LS123N
IC501 LA7851
Q591 2SK947 OR 2SK1036
Q592 2SK947 OR 2SK1036
Q593 2SK947 OR 2SK1036
Q594 2SK947 OR 2SK1036
Q595 2SK947

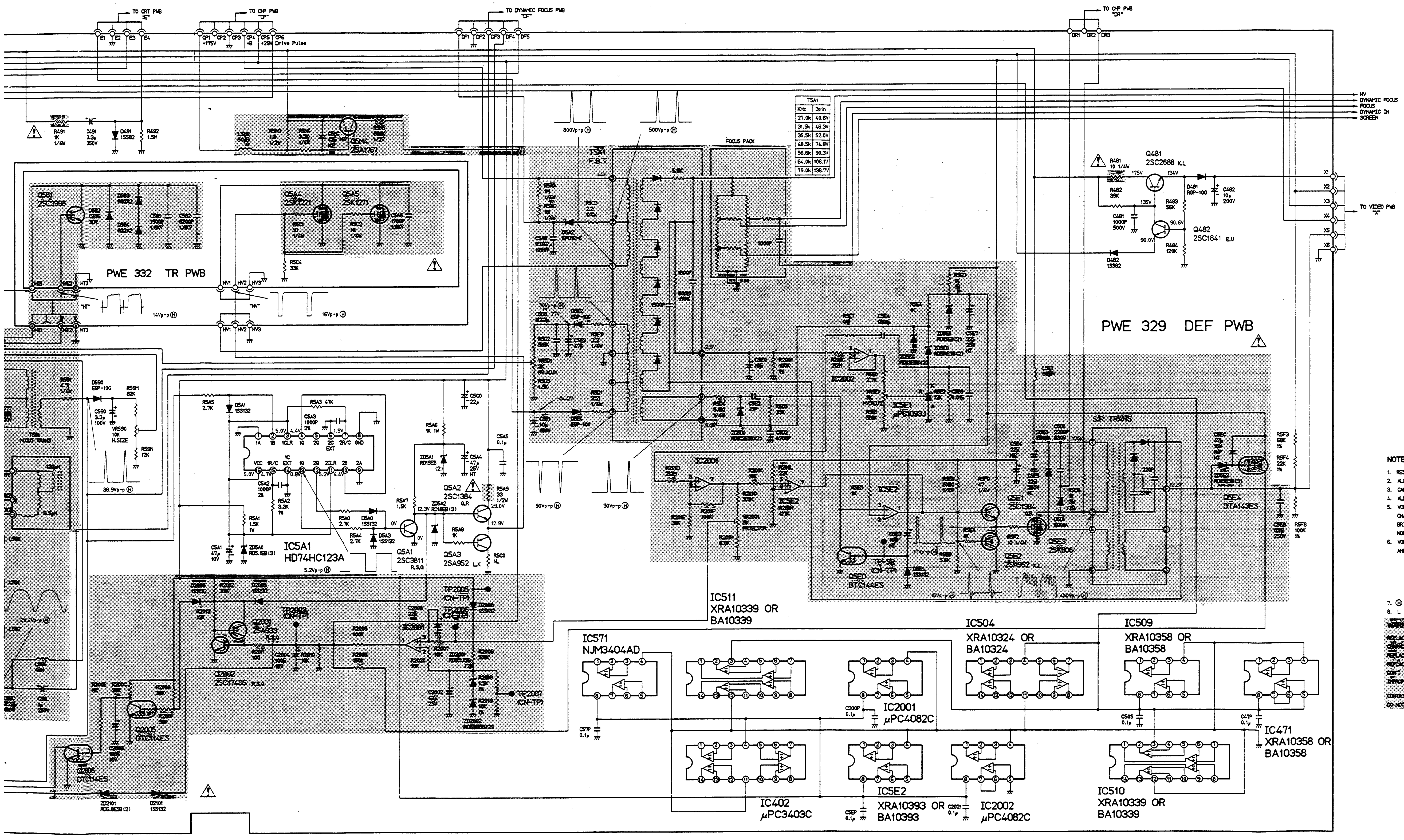

TO SDP PWB "SB"
TO SW PWB "K"
TO VIDEO PWB "CT"
TO CRT PWB "E"
TO CHP PWB "CP"
TO DYNAMIC FOCUS PWB "DF"
TO CHP PWB "DR"
PWE 332 TR PWB
T5A1 F.B.T
FOCUS PACK
S.R TRANS
H.OUT TRANS
H.Drive Trans
Q5G6 2SK758
Q5R3 2SC1740S
Q5R4 2SA933
Q5G4 2SC1740S
Q5G5 2SA933
Q571 2SB546A
Q572 2SC1740S
Q573 2SA933
Q574 2SK758
Q5B1 2SC3998
Q5A4 2SK1271
Q5A5 2SK1271
Q5M4 2SA1767
Q59F DTC144ES
Q59E DTA144WS
Q59C DTC144ES
Q59A DTA144WS
Q591 2SK947 OR 2SK1036
Q592 2SK947 OR 2SK1036
Q593 2SK947 OR 2SK1036
Q594 2SK947 OR 2SK1036
Q595 2SK947 OR 2SK1036
Q596 2SK947 OR 2SK1036
RL591 G6C-1114P
RL590 G6C-1114P
IC5A1 HD74HC123A
Q5A1 2SC3811
Q5A2 2SC1384
Q5A3 2SA952
Q2001 2SA933
Q2002 2SC1740S
Q2005 DTC114ES
Q2006 DTC114ES
TP2005 (CN-TP)
TP2006 (CN-TP)
TP2003 (CN-TP)
TP2007 (CN-TP)
IC2001
IC2002
IC5E1 μPC1093J
IC5E2
Q5E1 2SC1384
Q5E2 2SA952
Q5E3 2SK1806
Q5E9 DTC144ES
TP-SR (CN-TP)
IC511 XRA10339 OR BA10339
IC571 NJM3404AD
IC504 XRA10324 OR BA10324
IC2001 μPC4082C
IC402 μPC3403C
IC5E2 XRA10393 OR BA10393
IC2002 μPC4082C
IC510 XRA1033 BA10339
PWE
190Vp-p Ⓗ
180Vp-p Ⓗ
900Vp-p Ⓗ
14Vp-p Ⓗ
16Vp-p Ⓗ
30Vp-p Ⓗ
38.9Vp-p Ⓗ
80Vp-p Ⓗ
29.4Vp-p Ⓗ
12Vp-p Ⓗ
5.2Vp-p Ⓗ
800Vp-p Ⓗ
500Vp-p Ⓗ
90Vp-p Ⓗ
30Vp-p Ⓗ

KHz	C583
27.0k	38.9V
31.5k	45.2V
35.5k	49.9V
48.5k	69.6V
56.6k	80.2V
64.0K	87.3V
79.0k	110.2V

	Q59A	Q59E
KHz	B	B
27	17.9V	17.9V
31.5	17.9V	17.9V
35.5	17.9V	6.6V
48.5	6.5V	6.6V
56.6	6.5V	6.6V
64.0	6.5V	6.6V
79.0	6.5V	6.6V

T5A1	
KHz	3pin
27.0k	40.6V
31.5k	46.3V
35.5k	52.0V
48.5k	74.8V
56.6k	90.3V
64.0k	106.1V
79.0k	138.7V

RUN NO.1


TO CRT PWB "E"
TO CHP PWB "CP"
TO DYNAMIC FOCUS PWB "DF"
TO CHP PWB "DR"
HV
DYNAMIC FOCUS
FOCUS
DYNAMIC IN
SCREEN
TO VIDEO PWB "X"
+175V
+B
+29V
Drive Pulse
TSA1 F.B.T
FOCUS PACK
800Vp-p Ⓗ
500Vp-p Ⓗ
Q5A4 2SA1767
Q581 2SC3998
Q5A4 2SK1271
Q5A5 2SK1271
PWE 332 TR PWB
14Vp-p Ⓗ
16Vp-p Ⓗ
PWE 329 DEF PWB
Q481 2SC2688 K.L
Q482 2SC1841 E.U
IC5A1 HD74HC123A
Q5A1 2SC3811
Q5A2 2SC1384
Q5A3 2SA952 LK
IC2001
IC2002
IC5E1 µPC1093J
IC5E2
S/R TRANS
Q5E1 2SC1384
Q5E2 2SA952 K.L
Q5E3 2SK806
Q5E4 DTA143ES
Q5E0 BTC144ES
Q2001 2SA933
Q2002 2SC1740S
Q2005 DTC114ES
Q2006 DTC114ES
TP2005 (CN-TP)
TP2006 (CN-TP)
TP2007 (CN-TP)
TP2009 (CN-TP)
IC511 XRA10339 OR BA10339
IC571 NJM3404AD
IC504 XRA10324 OR BA10324
IC509 XRA10358 OR BA10358
IC2001 µPC4082C
IC471 XRA10358 OR BA10358
IC402 µPC3403C
IC5E2 XRA10393 OR BA10393
IC2002 µPC4082C
IC510 XRA10339 OR BA10339
90Vp-p Ⓥ
30Vp-p Ⓥ
38.9Vp-p Ⓗ
5.2Vp-p Ⓗ
29.4Vp-p Ⓥ

NOTES

1. RESISTOR VALUES ARE IN Ω (OHM) K = 1.000Ω M = 1.000.000Ω
2. ALL RESISTORS ARE 1/6WATT EXCEPT WHERE OTHERWISE INDICATED.
3. CAPACITOR VOLUES ARE IN µF UNLESS OTHERWISE INDICATED. P = PF
4. ALL CAPACITORS ARE 50VOLTS EXCEPT WHERE OTHERWISE INDICATED.
5. VOLTAGES AND WAVEFORMS ARE MEASURED UNDER THE INVERTED " H CHARACTER SIGNALS. THE CONTRAST CONTROL IS MAXIMUM. THE BRIGHTNESS CONTROL IS MINIMUM AND ALL OTHER CONTROLS ARE NORMAL OPERATION.
6. VOLTAGES AND WAVEFORMS ARE MESURD UNDER THE FOLLOWING SYNC. AND VIDEO EXCEPT WHERE OTHERWISE INDICATED.
   - SYNC : HORIZONTAL RATE = 31.5KHz VERTICAL RATE = 70HZ
     SEPARATE SYNC. TTL LEVEL
     HORIZONTAL SYNC. NEGATIVE
   - VIDEO : ANALOG 0.7Vp-p POSITIVE
   - MODE SW : OFF
7. Ⓗ----- HORIZONTAL RATE. Ⓥ ----- VERTICAL RATE.
8. L : TTL LOW LEVEL H " TTL HIGH LEVEL

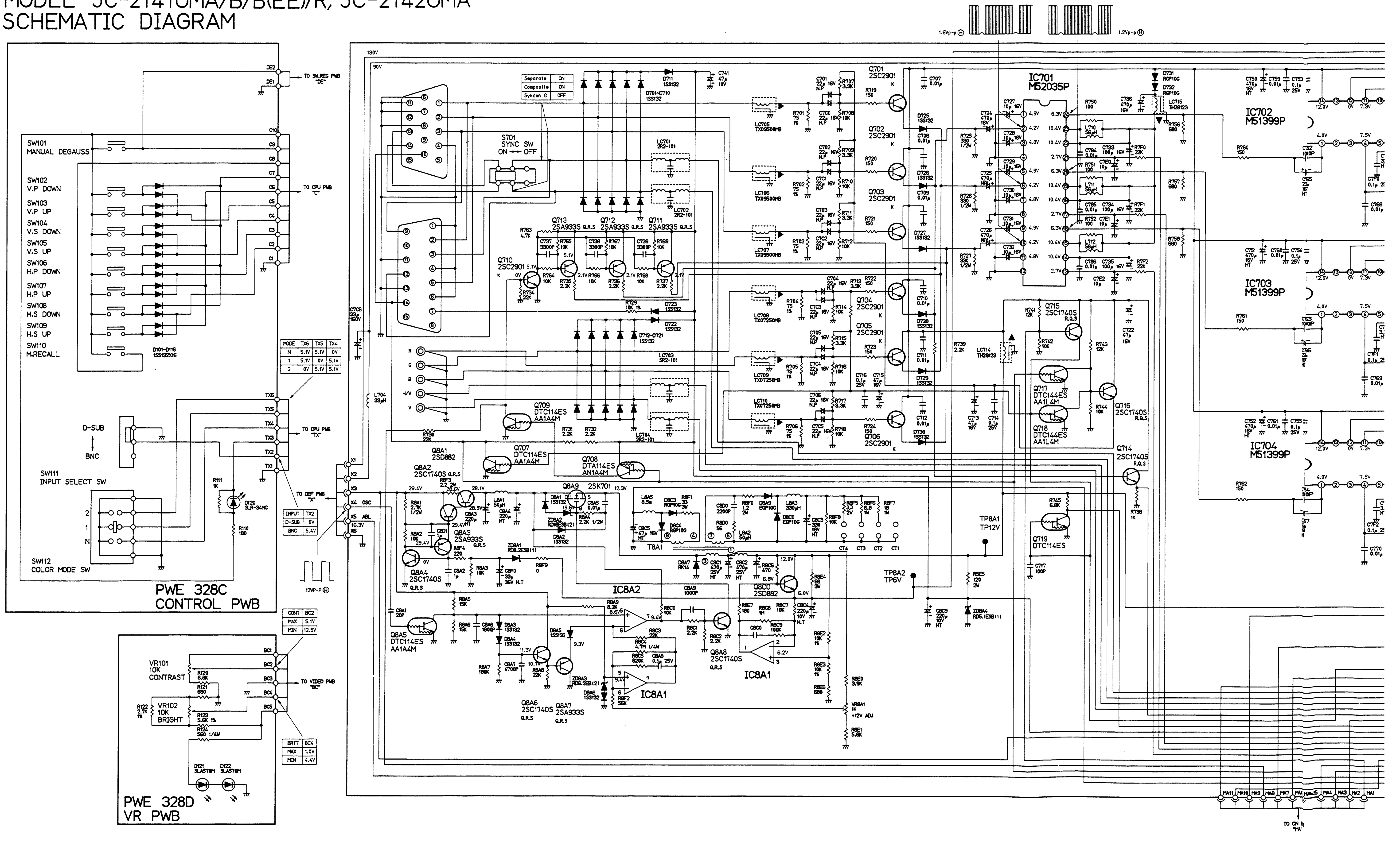
WARNING

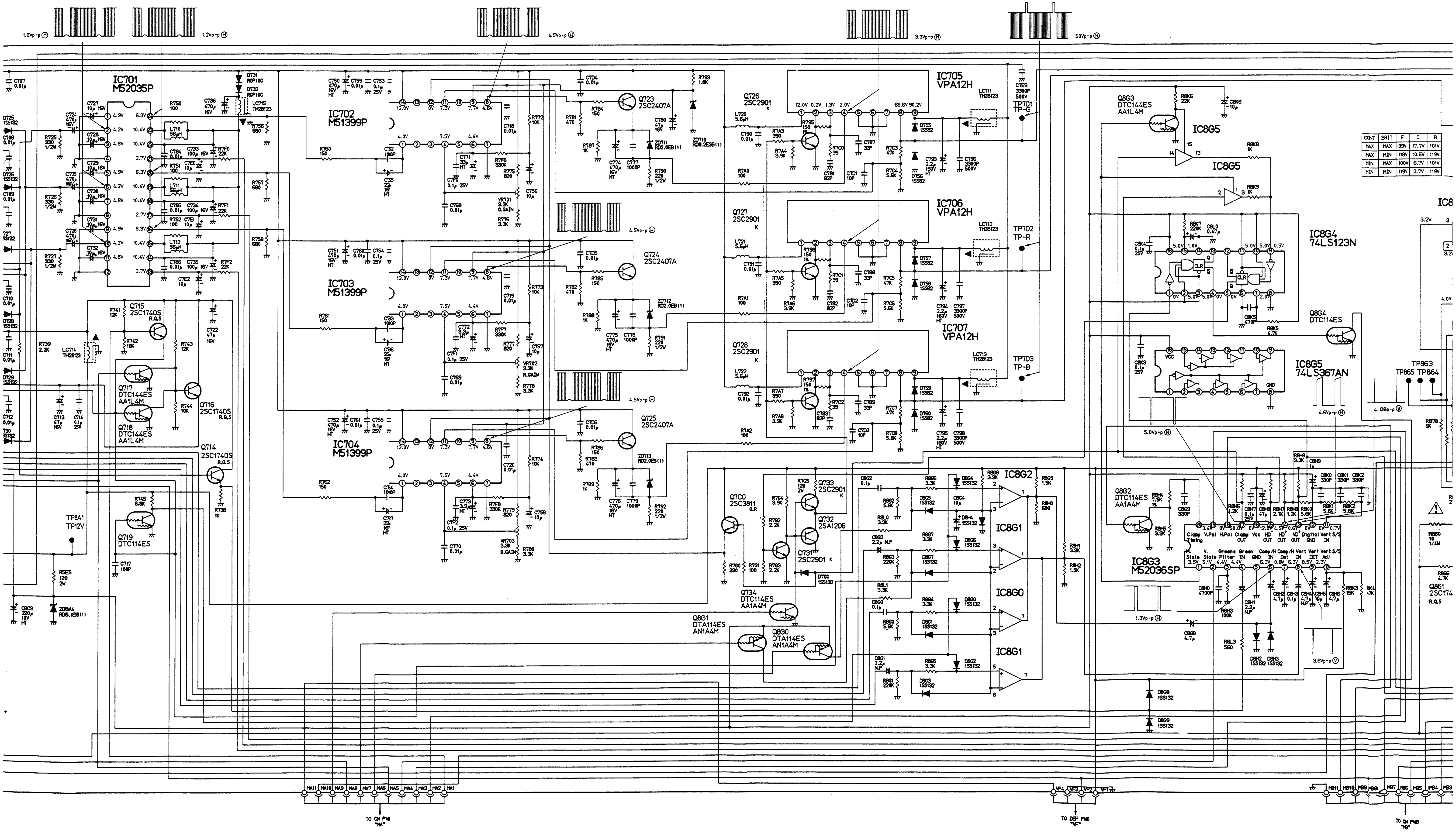
REPLACEMENT PARTS WHICH HAVE SPECIAL SAFETY CHARACTERISTICS ARE IDENTIFIED BY ⚠ SHADING ON THE SCHEMATICS. REPLACE THESE CRITICAL COMPONENTS WITH RECOMMENDED REPLACEMENT PARTS.
DON'T DEGRADE THE SAFETY OF THE SET THROUGH IMPROPER SERVICING.

CONTROL (S) MARKED ✱ IS PERMANENTLY FROZEN. DO NOT ATTEMPT TO DEFEAT OR IMPROPERLY REPLACE.

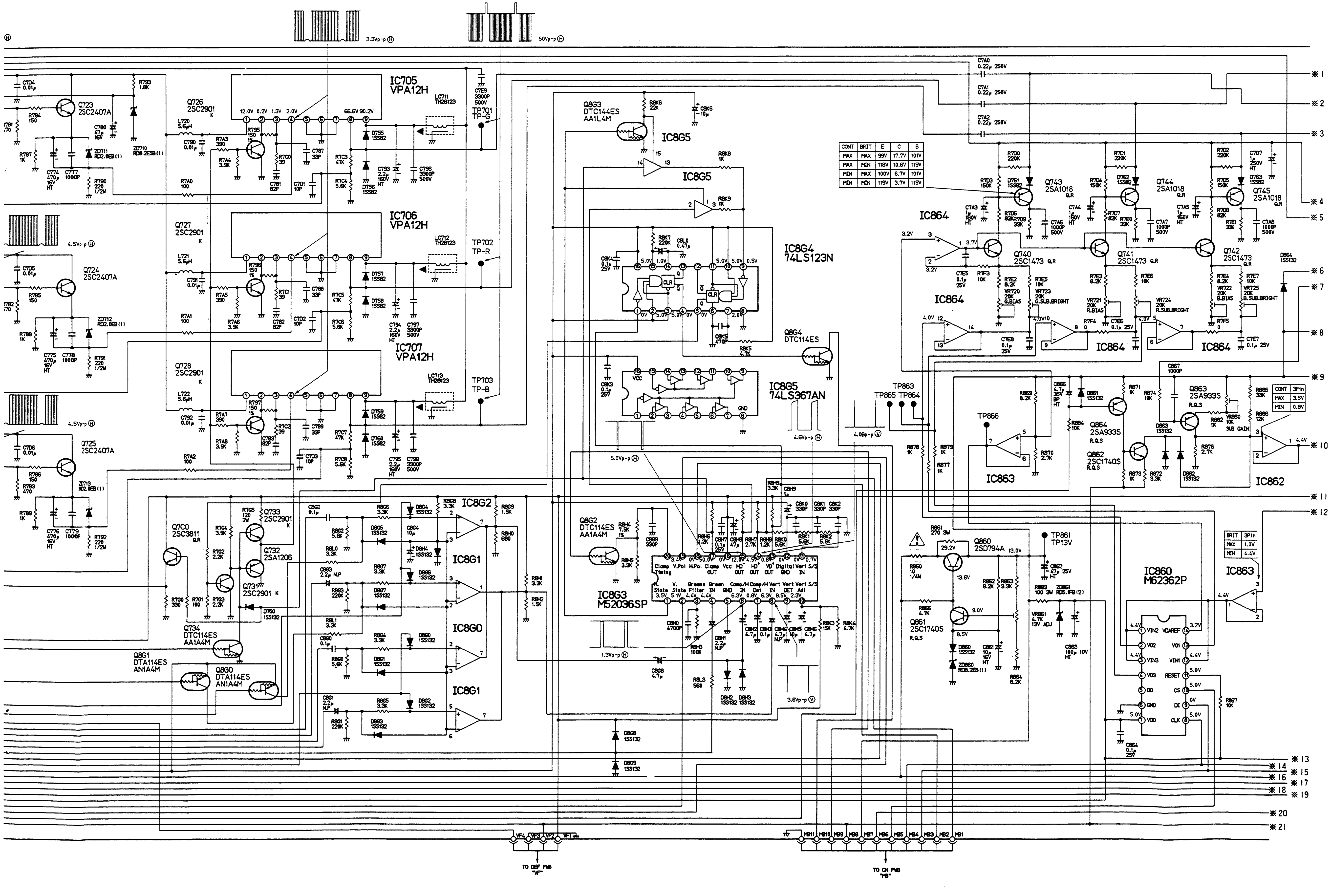
78164421

MODEL JC-2141UMA/B/B(EE)/R, JC-2142UMA
SCHEMATIC DIAGRAM


PWE 328C
CONTROL PWB
PWE 328D
VR PWB
SW101 MANUAL DEGAUSS
SW102 V.P DOWN
SW103 V.P UP
SW104 V.S DOWN
SW105 V.S UP
SW106 H.P DOWN
SW107 H.P UP
SW108 H.S DOWN
SW109 H.S UP
SW110 M.RECALL
D101-D116 1SS132X16
TO SW.REG PWB "DE"
TO CPU PWB "C"
TO CPU PWB "TX"
TO DEF PWB "X"
TO VIDEO PWB "BC"
TO CN "MA"
D-SUB
BNC
SW111 INPUT SELECT SW
SW112 COLOR MODE SW
VR101 10K CONTRAST
VR102 10K BRIGHT
MODE | TX6 | TX5 | TX4
N | 5.1V | 5.1V | 0V
1 | 5.1V | 0V | 5.1V
2 | 0V | 5.1V | 5.1V
INPUT | TX2
D-SUB | 0V
BNC | 5.4V
CONT | BC2
MAX | 5.1V
MIN | 12.5V
BRTT | BC4
MAX | 1.0V
MIN | 4.4V
Separate | ON
Composite | ON
Syncon G | OFF
S701 SYNC SW ON ← → OFF
IC701 M52035P
IC702 M51399P
IC703 M51399P
IC704 M51399P
IC8A1
IC8A2
T8A1
TP8A1 TP12V
TP8A2 TP6V
Q701 2SC2901
Q702 2SC2901
Q703 2SC2901
Q704 2SC2901
Q705 2SC2901
Q706 2SC2901
Q707 DTC114ES AA1A4M
Q708 DTA114ES AN1A4M
Q709 DTC114ES AA1A4M
Q710 2SC2901
Q711 2SA933S
Q712 2SA933S
Q713 2SA933S
Q714 2SC1740S
Q715 2SC1740S
Q716 2SC1740S
Q717 DTC144ES AA1L4M
Q718 DTC144ES AA1L4M
Q719 DTC114ES
Q8A1 2SD882
Q8A2 2SC1740S
Q8A3 2SA933S
Q8A4 2SC1740S
Q8A5 DTC114ES AA1A4M
Q8A6 2SC1740S
Q8A7 2SA933S
Q8A8 2SC1740S
Q8A9 2SK701
Q8C0 2SD882
130V
90V
1.6Vp-p Ⓗ
1.2Vp-p Ⓗ
12VP-P Ⓗ
R
G
B
H/V
V
X1
X2
X3
X4 OSC
X5 ABL
X6
CT4
CT3
CT2
CT1
MA11
MA10
MA9
MA8
MA7
MA6
MA5
MA4
MA3
MA2
MA1


IC701
M52035P
IC702
M51399P
IC703
M51399P
IC704
M51399P
IC705
VPA12H
IC706
VPA12H
IC707
VPA12H
IC8G5
IC8G4
74LS123N
IC8G5
74LS367AN
IC8G2
IC8G1
IC8G0
IC8G3
M52036SP
Q723
2SC2407A
Q724
2SC2407A
Q725
2SC2407A
Q726
2SC2901
Q727
2SC2901
Q728
2SC2901
Q715
2SC1740S
Q716
2SC1740S
Q714
2SC1740S
Q717
DTC144ES
AA1L4M
Q718
DTC144ES
AA1L4M
Q719
DTC114ES
Q7C0
2SC3811
Q733
2SC2901
Q732
2SA1206
Q731
2SC2901
Q734
DTC114ES
AA1A4M
Q8G1
DTA114ES
AN1A4M
Q8G0
DTA114ES
AN1A4M
Q8G3
DTC144ES
AA1L4M
Q8G4
DTC114ES
Q8G2
DTC114ES
AA1A4M
Q861
2SC174
TP701
TP-G
TP702
TP-R
TP703
TP-B
TP8A1
TP12V
TP863
TP865
TP864
1.6Vp-p Ⓗ
1.2Vp-p Ⓗ
4.5Vp-p Ⓗ
3.3Vp-p Ⓗ
50Vp-p Ⓗ
5.0Vp-p Ⓗ
4.6Vp-p Ⓗ
4.06p-p Ⓥ
1.3Vp-p Ⓗ
3.6Vp-p Ⓥ
VR701
3.3K
G.GAIN
VR702
3.3K
R.GAIN
VR703
3.3K
B.GAIN
TO CN PWB
"MA"
TO DEF PWB
"VF"
TO CN PWB
"MB"
MA11 MA10 MA9 MA8 MA7 MA6 MA5 MA4 MA3 MA2 MA1
VF4 VF3 VF2 VF1
MB11 MB10 MB9 MB8 MB7 MB6 MB5 MB4 MB3

CONT	BRIT	E	C	B
MAX	MAX	99V	17.7V	101V
MAX	MIN	118V	10.6V	119V
MIN	MAX	100V	6.7V	101V
MIN	MIN	119V	3.7V	119V

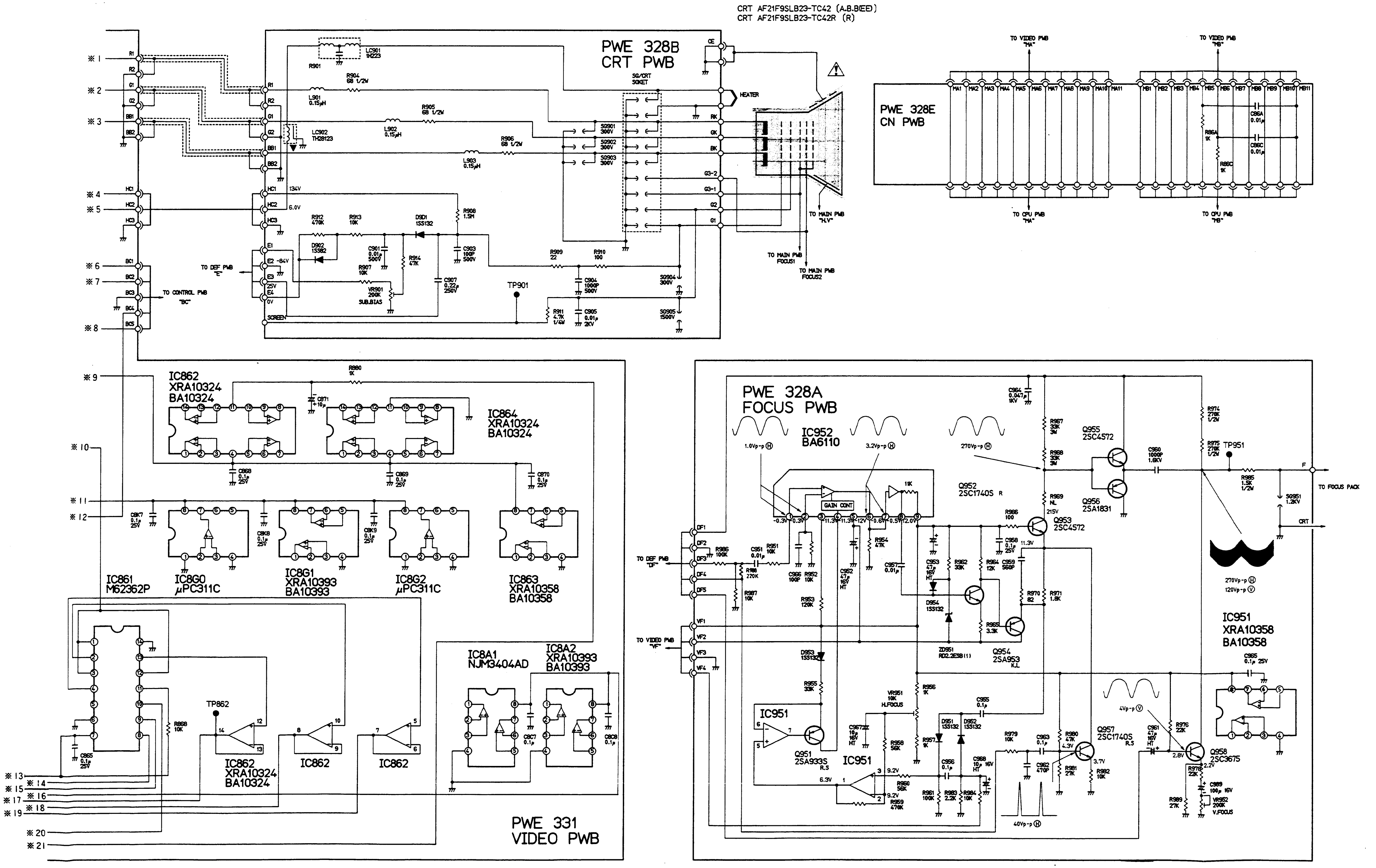

3.3Vp-p Ⓗ
50Vp-p Ⓗ
4.5Vp-p Ⓗ
IC705 VPA12H
IC706 VPA12H
IC707 VPA12H
Q723 2SC2407A
Q724 2SC2407A
Q725 2SC2407A
Q726 2SC2901
Q727 2SC2901
Q728 2SC2901
LC711 TH28123
LC712 TH28123
LC713 TH28123
TP701 TP-G
TP702 TP-R
TP703 TP-B
Q8G3 DTC144ES AA1L4M
IC8G5
IC8G4 74LS123N
Q8G4 DTC114ES
IC8G5 74LS367AN
5.0Vp-p Ⓗ
4.6Vp-p Ⓗ
4.0Bp-p Ⓥ
Q7C0 2SC3811
Q733 2SC2901
Q732 2SA1206
Q731 2SC2901
Q734 DTC114ES AA1A4M
Q8G1 DTA114ES AN1A4M
Q8G0 DTA114ES AN1A4M
IC8G2
IC8G1
IC8G0
IC8G1
Q8G2 DTC114ES AA1A4M
IC8G3 M52036SP
1.3Vp-p Ⓗ
3.6Vp-p Ⓥ
Clamp Timing
V.Pol State
H.Pol State
Clamp Filter
Vcc
Greens IN
Green GND
HD' OUT
Comp./H IN
VD' OUT
Comp./H Det
Vert IN
Digital GND
Vert DET
Vert S/S IN
Vert S/S Adj
IC864
Q743 2SA1018
Q744 2SA1018
Q745 2SA1018
Q740 2SC1473
Q741 2SC1473
Q742 2SC1473
VR720 20K G.BIAS
VR723 20K G.SUB.BRIGHT
VR721 20K R.BIAS
VR724 20K R.SUB.BRIGHT
VR722 20K B.BIAS
VR725 20K B.SUB.BRIGHT
TP863
TP865 TP864
TP866
IC863
Q863 2SA933S
Q864 2SA933S
Q862 2SC1740S
VR860 10K SUB GAIN
IC862
Q860 2SD794A
TP861 TP13V
Q861 2SC1740S
VR861 4.7K 13V ADJ
IC860 M62362P
VIN2 VDAREF VO2 VO1 VIN3 VIN1 VO3 RESET DO CS GND DI VDD CLK
IC863
VF4 VF3 VF2 VF1
TO DEF PWB "VF"
MB11 MB10 MB9 MB8 MB7 MB6 MB5 MB4 MB3 MB2 MB1
TO CN PWB "MB"
※1 ※2 ※3 ※4 ※5 ※6 ※7 ※8 ※9 ※10 ※11 ※12 ※13 ※14 ※15 ※16 ※17 ※18 ※19 ※20 ※21

CONT	BRIT	E	C	B
MAX	MAX	99V	17.7V	101V
MAX	MIN	118V	10.6V	119V
MIN	MAX	100V	6.7V	101V
MIN	MIN	119V	3.7V	119V

CONT	3Pin
MAX	3.5V
MIN	0.8V

BRIT	3Pin
MAX	1.0V
MIN	4.4V

RUN NO.1



CRT AF21F9SLB23-TC42 (A.B.B(ED)
CRT AF21F9SLB23-TC42R (R)
PWE 328B
CRT PWB
PWE 328E
CN PWB
PWE 328A
FOCUS PWB
PWE 331
VIDEO PWB
TO VIDEO PWB "MA"
TO VIDEO PWB "MB"
TO CPU PWB "MA"
TO CPU PWB "MB"
TO MAIN PWB "H.V"
TO MAIN PWB FOCUS1
TO MAIN PWB FOCUS2
TO DEF PWB "E"
TO CONTROL PWB "BC"
TO DEF PWB "DF"
TO VIDEO PWB "VF"
TO FOCUS PACK
HEATER
SG/CRT SOKET
TP901
TP862
TP951
IC862 XRA10324 BA10324
IC864 XRA10324 BA10324
IC861 M62362P
IC8G0 μPC311C
IC8G1 XRA10393 BA10393
IC8G2 μPC311C
IC863 XRA10358 BA10358
IC8A1 NJM3404AD
IC8A2 XRA10393 BA10393
IC952 BA6110
IC951 XRA10358 BA10358
Q951 2SA933S R.S
Q952 2SC1740S R
Q953 2SC4572
Q954 2SA953 K.L
Q955 2SC4572
Q956 2SA1831
Q957 2SC1740S R.S
Q958 2SC3675
GAIN CONT
VR951 10K H.FOCUS
VR952 200K V.FOCUS
VR901 200K SUB.BIAS
1.0Vp-p Ⓗ
3.2Vp-p Ⓗ
270Vp-p Ⓗ
270Vp-p Ⓗ
120Vp-p Ⓥ
4Vp-p Ⓥ
40Vp-p Ⓗ
※1
※2
※3
※4
※5
※6
※7
※8
※9
※10
※11
※12
※13
※14
※15
※16
※17
※18
※19
※20
※21

78164421

NEC

C&C Computers and Communications

SER NO. 2145
20.25S9203
Printed in Japan